REPORT RESUMES

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MASTER PLAN FOR STATE POLICY IN HIGHER EDUCATION.
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OHIO BOARD OF REGENTS, COLUMBUS

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A COMPREHENSIVE PLAN FOR PUBLIC HIGHER EDUCATION IN OHIO IS PRESENTED AS A GUIDE TO IMPLEMENTING AND CONTINUING THE POLICY OF OPEN ACCESS TO STATE-ASSISTED INSTITUTIONS OF HIGHER EDUCATION FOR ALL OHIO RESIDENTS WHO GRADUATE FROM HIGH SCHOOL. IN THIS PLAN, THE OHIO BOARD OF REGENTS, WHICH IS THE STATEWIDE PLANNING AND COORDINATING AGENCY FOR PUBLIC POLICY IN HIGHER EDUCATION, GIVES ATTENTION TO (1) THE ROLES OF EACH OF THE EXISTING PUBLIC HIGHER EDUCATION INSTITUTIONS, (2) CURRENT STATUS AND FUTURE NEEDS FOR SPECIFIC UNDERGRADUATE PROGRAMS, (3) PROFESSIONAL EDUCATION, (4) GRADUATE STUDY AND RESEARCH, (5) ENROLLMENT DISTRIBUTIONS AND PRIORITIES FOR NEW INSTITUTIONS AND ADDITIONAL FACILITIES, AND (6) SPECIAL AREAS OF LIBRARY SERVICES, EDUCATIONAL RADIO AND TELEVISION, CONTINUING EDUCATION, TEACHING HOSPITALS, STUDENT ASSISTANCE, AND RETIREMENT AND FRINGE BENEFITS. A TOTAL OF 126 RECOMMENDATIONS AND POLICY STATEMENTS ARE SUPPORTED BY CHAPTERS WHICH INCLUDE BACKGROUND INFORMATION AND FINDINGS OF THE STUDIES CONDUCTED BY THE REGENTS. (WO)

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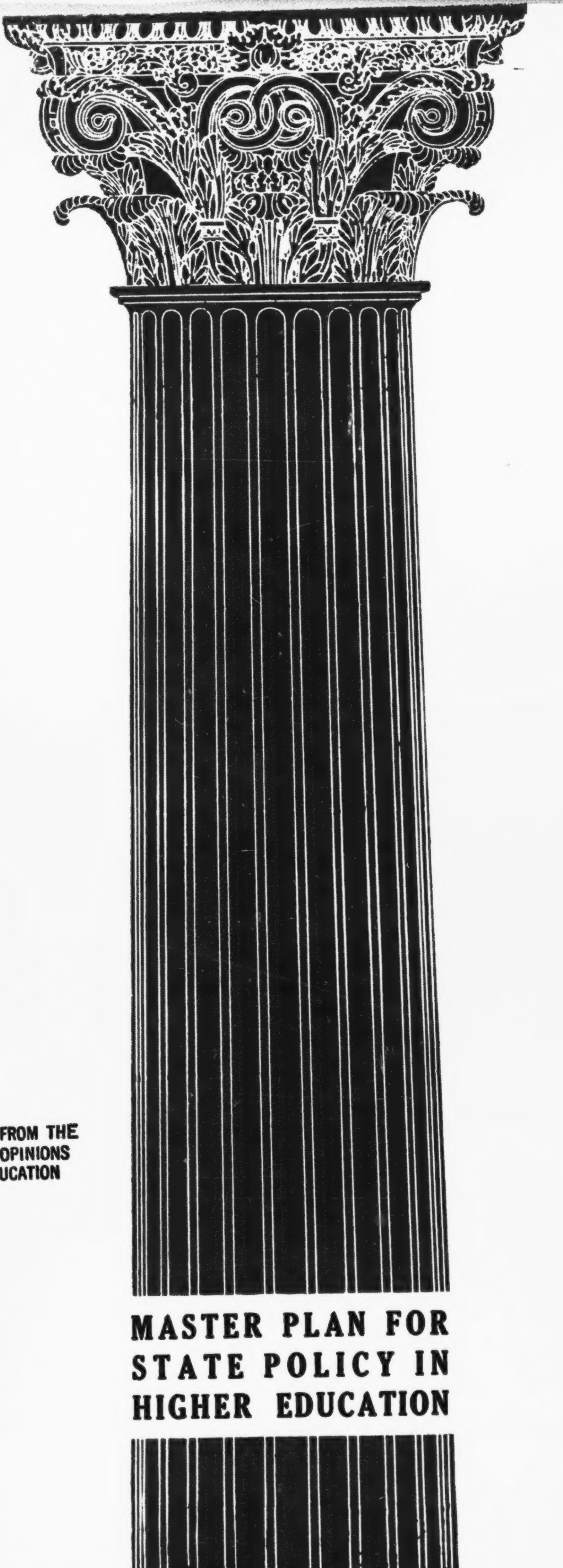

MASTER PLAN FOR STATE POLICY IN HIGHER EDUCATION

OHIO BOARD OF REGENTS • JUNE, 1966

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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MASTER PLAN
for
STATE POLICY
in
HIGHER EDUCATION

Ohio Board of Regents

June, 1966

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FOREWORD

When the Board of Regents came into being on September 20, 1963, our first obligation was to prepare the Master Plan called for by the enabling statute (Sec. 3333.04, Ohio Revised Code).

In January, 1964, the Board contracted with the Academy for Educational Development to survey higher education needs in Ohio. Most of this survey was completed by July of that year. The Academy made a preliminary report in June, 1964, on higher education in Cleveland and, in September, on the needs for medical education in Ohio. Both resulted in Board recommendations to the Governor and General Assembly that a new state university in Cleveland and a new medical college in Toledo be created. Both were established by acts of the special session of the General Assembly in December, 1964.

From the wealth of studies and other material supplied by the Academy, supplemented by our own staff work, we published in April, 1965, a *Provisional Master Plan for Public Higher Education in Ohio*. This was widely distributed, and it was emphasized that it was merely provisional and subject to revision in the light of suggestions and criticisms and after further consideration by the Board.

Public hearings on the Provisional Master Plan were held during September, 1965, at Toledo, Cleveland, Columbus, and Cincinnati. These hearings were conducted by panels made up of three regents for each hearing. They generated widespread interest.

At Toledo the panel heard statements from eight persons representing one state university, one municipal university, one private college, a vocational education school district, and two voluntary associations. In Cleveland the panel heard statements from fourteen persons representing two state universities, one municipal university, two community colleges, one vocational-technical school, and two voluntary associations. In Columbus the panel heard statements from fourteen persons representing three state universities, three private colleges, the Ohio Higher Education Assistance Commission, and four voluntary associations. In Cincinnati the panel heard statements from nine persons representing one state university, one municipal university, the Wright State Campus, one private technical college, and five voluntary associations.

In addition, the Chancellor and other members of the staff participated in many different meetings held by educational groups to discuss the Provisional Master Plan. Various advisory committees to the Board of Regents have been formed and have considered the Plan and presented their suggestions for desirable changes. We acknowledge the assistance of all committees, and in particular have found helpful comments received from the Science Advisory Committee and from the Private Institutions Advisory Committee.

When the Provisional Master Plan was published, the 106th Ohio General Assembly was in session. Copies of the Plan were personally presented by the Board to legislative leaders, and all members of the General Assembly received copies. The document was the basis of various matters of legislation affecting higher education considered by the 106th General Assembly, many items recommended by the Board being enacted into law in 1965.

In presenting this current Master Plan, we have carefully considered the criticisms and the many constructive proposals which have been submitted, both formally and informally. In addition, many developments which have occurred since April, 1965, make the Provisional Master Plan out of date.

In one respect this Master Plan omits recommendations contained in the Provisional Master Plan. It does not repeat earlier recommendations which have since been placed into effect. It meets certain figures set forth in the Provisional Plan relating to the support factors to be used in preparing the appropriation request for the 1967-1969 biennium. These specific figures are omitted from the Master Plan in order to permit more careful analysis of instructional costs. Such analysis will be completed, or will be greatly advanced, in time for the budget presentation to the Governor and

General Assembly in 1967. Projections of capital budget requirements have also needed further refinement. Accordingly, this Master Plan presents a general approach to the performance of the budget functions of the Board of Regents and leaves more detailed analysis of needs and projections of appropriations for inclusion in the operating budget document and the capital improvements budget document to be completed at a later date.

The current Master Plan will not satisfy everyone. No plan could. The purpose of a master plan is to guide desirable action and to illuminate choices which must be made by many persons and groups, official and unofficial. It may not be feasible to accomplish all of the objectives set forth herein, but we have been guided in our thinking by the limitations of the possible, as well as by the aspirations of the desirable.

We believe this Master Plan not only to be comprehensive but to be realistically compatible with the interests of all sectors of society. This Master Plan will require continuous adjustment with changing circumstances and should be republished periodically with appropriate revisions.

We believe that, in the words of the enabling statute, this Master Plan for public policy on higher education takes into account "the needs of the people, the needs of the state, and the role of individual public and private institutions within the state in fulfilling these needs." Certainly, this has been our purpose and intent.

John Marshall Briley
Chairman

Columbus, Ohio
June, 1966

PART ONE

Recommendations and Conclusions of the Master Plan

RECOMMENDATIONS AND CONCLUSIONS

I

HIGHER EDUCATION IN OHIO

GENERAL

1. Higher education must be given a place of high importance among the major needs of the nation and of Ohio if the growing demands for educated manpower are to be met, if the increasing necessity for an educated citizenry is to be satisfied, if the national security is to be preserved, if economic growth is to be ensured, and if individual satisfaction and the general welfare are to be enhanced.

2. Undergraduate education should not be considered as sufficient to fulfill these needs. Graduate education in the professions and in the scholarly fields of learning should receive major emphasis in the years ahead.

PRIVATE COLLEGES AND UNIVERSITIES

3. Ohio is fortunate in having many colleges and universities functioning under private sponsorship. Although these institutions do not operate under the authority of the Ohio Board of Regents, it should be public policy and should be recognized as being in the public interest to strengthen and to assist them in appropriate ways.

4. Colleges and universities operating under private sponsorship should not be expected to expand as rapidly as publicly sponsored institutions, but their programs and enrollment should be expected to supplement and complement the instructional services provided by the public institutions.

5. In making decisions affecting the development of publicly sponsored institutions of higher education, the Board of Regents should seek to prevent or to minimize insofar as reasonably possible any unfavorable repercussions upon the programs, enrollment, or financing of privately sponsored colleges and universities.

6. The State of Ohio should assist indirectly the enrollment expansion of accredited privately sponsored colleges and universities by providing tuition equalization grants designed to help their full-time students who are Ohio residents and who maintain a satisfactory academic record.

7. The State of Ohio should consider an arrangement to provide facility assistance to accredited privately sponsored colleges and universities through construction and leasing of new classroom, library, or laboratory buildings needed for expanding enrollments, if such a program is permitted under the State and Federal Constitutions.

II

ADMISSION AND ENROLLMENT

ADMISSION

8. Present provisions of Ohio law require open access to state assisted institutions of higher education for all Ohio residents who graduate from high school. The policy of open access should be continued.

9. Open access to higher education should be provided by expanding facilities, primarily at the lower division level, which can accommodate high school graduates on a commuting basis within reasonable distance from their homes.

10. Students enrolling in university branches, community colleges, and technical institutes should be encouraged to undertake appropriate baccalaureate programs on the central campus of a state assisted university if they are interested in doing so and if they make a satisfactory academic record in their lower division program. No type of state assisted institution of higher education should be considered as a termination of educational opportunity for the interested and qualified student.

ENROLLMENT

11. In order to provide open access to higher education for all high school graduates who wish to enroll, in order to meet increased demands of the labor market for educated manpower, and in order to provide enlarged opportunity for graduate education, a substantial increase in enrollment should be anticipated in the next 15 years.

12. The total enrollment of all Ohio colleges and universities on a head count basis consisted of 266,000 students in the autumn of 1965, of whom 190,000 students were enrolled on a full-time basis and 76,000 students were enrolled on a part-time basis. Ohio should prepare for a total enrollment of 410,000 students by the autumn of 1970, for a total enrollment of 555,000 students by the autumn of 1975, and for a total enrollment of 650,000 students by the autumn of 1980.

a. Privately sponsored colleges and universities should be encouraged to expand their total enrollment from 98,000 students in the autumn of 1965 to 130,000 students in 1970, to 165,000 students in 1975, and to 200,000 students in 1980.

b. Publicly sponsored colleges and universities should be enabled to expand their total enrollments from 168,000 students in the autumn of 1965 to 280,000 students in 1970, to 390,000 students in 1975, and to 450,000 students in 1980.

ENROLLMENT DISTRIBUTION

13. First priority in the development of expanded academic facilities for higher education should be given to the needs of the major urban areas having a 1965 population of 300,000 or more.

a. The Cleveland State University and The Cuyahoga Community College should be assisted to help meet the enrollment needs of the Cuyahoga County area.

b. The University of Cincinnati should be assisted to help meet the enrollment needs of the Hamilton County area.

c. The Ohio State University should be assisted to help meet the enrollment needs of the Franklin County area.

d. The Wright State University and The Sinclair Community College should be assisted to help meet the enrollment needs of the Montgomery County area.

e. The University of Akron should be assisted to help meet the enrollment needs of the Summit County area.

f. The University of Toledo should be assisted to help meet the enrollment needs of the Lucas County area.

g. The Kent State University—Canton and The Stark County Technical Institute should be assisted to help meet the enrollment needs of the Stark County area.

h. Youngstown University should become a state university, and with The Mahoning Community College should be assisted to help meet the enrollment needs of the Mahoning County area.

14. Second priority in the development of expanded facilities for higher education should be given to the needs of areas having a 1965 population of 100,000 to 300,000.

a. The Lorain County Community College should be assisted to help meet the needs of the Lorain County area.

b. The Kent State University—Warren should be assisted to help meet the needs of the Trumbull County area.

c. The Miami University—Middletown and The Miami University—Hamilton should be assisted to help meet the needs of the Butler County area.

d. A community college or a university branch might be developed to help meet the needs of the Lake County area.

e. The Clark County Technical Institute should be assisted to help meet the needs of the Clark County area.

f. The Ohio State University—Mansfield should be assisted to help meet the needs of the Richland County area.

g. The Central State University and The Wright State University should be assisted to help meet the needs of the Greene County area.

h. The Ohio State University—Lima should be assisted to help meet the needs of the Allen County area.

i. Facilities as planned for the adjacent area should help meet the needs of Columbiana County.

j. The Kent State University should be assisted to help meet the needs of the Portage County area.

k. The University of Cincinnati through its branch in Blue Ash should be considered as helping meet the needs of the Clermont County area.

l. The Ohio State University—Newark should be assisted to help meet the needs of the Licking County area.

m. The Kent State University—Ashtabula should be assisted to help meet the needs of the Ashtabula County area.

n. A technical institute should be assisted to help meet the needs of the Jefferson County area.

15. Third priority in the development of expanded academic facilities should be given to groupings of counties which have a population of 100,000 or more and which may not be adjacent to other facilities enumerated above.

a. The Ohio University—Portsmouth should be assisted to help meet the needs of Scioto County and adjacent counties.

b. The Ohio University—Chillicothe should be assisted to help meet the needs of Ross County and adjacent counties.

c. The Ohio University—Lancaster should be assisted to help meet the needs of Fairfield County and adjacent counties.

d. The Ohio University—Zanesville should be assisted to help meet the needs of Muskingum County and adjacent counties.

e. The Ohio University—Belmont County should be assisted to help meet the needs of Belmont County and adjacent counties.

f. The Ohio State University—Marion should be assisted to help meet the needs of Marion County and adjacent counties.

g. The Kent State University—New Philadelphia should be assisted to help meet the needs of Tuscarawas County and adjacent counties.

h. The Bowling Green State University—Sandusky should be assisted to help meet the needs of Erie, Ottawa and Huron Counties.

16. Two-year academic facilities in other locations should be developed only as it is demonstrated that existing or planned facilities are unreasonably distant or will not accommodate enrollment demands, that new facilities will be fully utilized, and that local contributions will be available to assist in meeting the costs of the necessary capital plant improvements.

17. New branches should be developed by the newly created state universities as needs arise, and some readjustments in branch assignments should be considered as the new state universities get underway.

DEVELOPMENT OF RESIDENTIAL CAMPUSES

18. In order to ensure that the central campuses of state assisted universities will be able to accommodate the demand for upper division students, professional students, and graduate students, the number of freshmen admitted in the autumn to central campuses on a residential basis and living in housing owned by or related to each university should be limited. These limitations would not apply to

students attending on a commuting basis who continue to reside with their parents or a close relative such as an aunt-uncle or older sister-brother and who are enrolled in accordance with the arrangements established by each state assisted university for accommodating commuting students.

19. In the future as increasing numbers of students desire to enroll at the upper division and graduate level, the number of freshman students admitted in the autumn on a residential basis at the central campus of the following universities should be limited as set forth herein:

The Bowling Green State University	3,000
The Central State University	3,000
The Kent State University	4,000
The Miami University	3,000
The Ohio State University	6,000
The Ohio University	4,000

20. In enrolling out-of-state freshmen on a residential basis, the number should be restricted to 20 percent of all freshmen enrolled on a residential basis.

III

UNDERGRADUATE PROGRAMS

GENERAL EDUCATION

21. Every state assisted college and university at the lower division level should develop a general education program and should expect every student to meet minimum course requirements in such a program, except for high school graduates admitted on an advanced placement basis. The objective of a general education program should be to introduce every student to an historical and contemporary understanding of the range of man's intellectual heritage and explorations. A general education foundation should be extended to every undergraduate program of professional specialization.

22. In community colleges and university branches it is recommended that successful completion of a two-year instructional program in general education (arts and sciences) should be recognized by award of the degree Associate in Arts.

TECHNICAL EDUCATION

23. There is an apparent need for a larger number of two-year instructional programs in business technologies, health technologies, agricultural technologies, and engineering technologies to meet the employment demands of our increasingly technical economy.

24. Technical education programs to be of higher education quality should provide a curriculum in which approximately one-half of the course requirements consists of general education and basic courses and approximately one-half of the courses involve the appropriate technology.

25. Satisfactory completion of a two-year technical education curriculum should be recognized by award of the degree Associate in Applied Science or in Applied Business.

ARTS and SCIENCES

26. The arts and sciences should continue to receive emphasis among baccalaureate instructional programs as the historical and contemporary foundation of man's learning, as the disciplines leading to specialized study, and as the intellectual base for graduate professional fields of study.

TEACHER EDUCATION

27. State assisted universities should continue to provide baccalaureate programs in teacher education on a four-year basis.

28. Continuing attention should be given to improvements in the undergraduate curricula of teacher education, and especially to improvements in the content of both subject-matter courses and professional courses.

BUSINESS ADMINISTRATION

29. State assisted universities should continue to provide baccalaureate programs in business administration.

30. Continuing attention should be given to improvements in the undergraduate curricula of business administration, and especially to improvements in the content of courses dealing with economics and general business management.

ENGINEERING

31. There does not appear to be a need at this time for additional programs in engineering education in state assisted universities beyond those provided by the six existing accredited schools of engineering and the emerging science and engineering program at Wright State University.

32. State assisted universities should give increased attention to recruitment and enrollment of qualified engineering students, and to encouragement of students to complete a baccalaureate program in engineering.

33. Continuing attention should be given to improvements in the undergraduate curricula of engineering, and especially to improvements in the basic science and mathematical foundations of engineering and in laboratory requirements.

34. The primary objective of undergraduate engineering education should continue to be to meet the needs of industry for professional engineers, and especially the needs of Ohio industry.

ARCHITECTURE

35. There does not appear to be a need at this time for additional programs in architecture in state assisted universities beyond those provided by the five existing accredited programs.

36. Continuing attention should be given to improvement in the facilities and curriculum in architecture.

AGRICULTURE

37. The College of Agriculture and Home Economics within The Ohio State University is sufficient to meet the needs of the state for persons professionally educated in agricultural specializations.

38. The scope of instruction in agriculture should reach beyond the farm enterprise itself to include such related agricultural enterprises as the seed and fertilizer business, horticulture and forestry, agricultural equipment, and food processing.

39. Continuing attention should be given to improvements in the undergraduate curricula of agriculture, and especially to agricultural economics and management and to plant and animal genetics, plant and animal pathology, entomology, and soil conservation.

FINE ARTS

40. Existing undergraduate programs in drama, music, and art appear generally to be satisfactory. Increased attention needs to be given to the role of state assisted universities in providing students and adults the opportunity for appreciation of the visual and performing arts.

JOURNALISM

41. There does not appear to be a need at this time for additional undergraduate schools of journalism beyond those now provided in three state assisted universities. There does appear to be a need for at least one master's degree program in the field.

42. Continuing attention should be given to improvement in the undergraduate curricula of journalism, particularly to background courses in public affairs, science, the arts, and education. The professional content of journalism education should be limited primarily to fundamental courses.

HOME ECONOMICS

43. Practically all of the state assisted universities now offer programs in home economics. The recruitment of students for existing programs should be given additional attention, and the broadened career opportunities in this field should be emphasized.

NURSING EDUCATION

44. There is a shortage in the supply of educated nurses with which to meet the health needs of Ohio. There is a particular shortage in the number of baccalaureate programs in nursing and in the number of students enrolled in these programs. Additional programs beyond the two approved baccalaureate programs in nursing now provided by state assisted universities should be established.

IV

SPECIAL PROFESSIONAL PROGRAMS

OPTOMETRY

45. There does not appear to be need at this time to provide any additional program in optometry beyond that now available in the School of Optometry of The Ohio State Uuiversity.

PHARMACY

46. There does not appear to be a need at this time to provide any additional programs in pharmacy in state assisted universities beyond those now available in The University of Cincinnati, The Ohio State University, and The University of Toledo.

VETERINARY MEDICINE

47. There does not appear to be a need at this time to provide any additional program in veterinary medicine beyond that now available and that which will be available upon completion of the facility expansion underway in the College of Veterinary Medicine of The Ohio State University.

SOCIAL WORK

48. There is a need for an additional school of social work in Ohio beyond that now operated by The Ohio State University. A new school should be established, preferably in Cincinnati.

49. Consideration at a later date should be given to the desirability of establishing a third school of social work at a state assisted university in Ohio.

LIBRARY SCIENCE

50. The program in library science at The Kent State University should be strengthened and another school of library science should be established at a state assisted university.

LAW

51. There does not appear at this time to be a need for any additional programs in legal education beyond the four now provided by state assisted universities.

52. The desirability of opportunities for legal education on a part-time basis in the evening is a subject of controversy among lawyers and legal educators. It seems desirable that the opportunities for part-time legal education in Ohio be provided in conjunction with established day-time programs in state assisted universities.

PUBLIC ADMINISTRATION

53. There appears to be a need for a professional school of public administration at one of the state universities, and the creation of such a school might well be considered by The Ohio State University.

DENTISTRY

54. There appears to be a need to expand the number of students in the field of dentistry in Ohio, and the size of the entering class in the College of Dentistry at The Ohio State University should be increased from 150 to 200 students.

55. A study will be undertaken to determine the need for a new college of dentistry in Ohio.

MEDICINE

56. There appears to be a need to expand the number of students in the field of medicine, and the size of the entering class in the College of Medicine at The Ohio State University should be increased from 150 to 200 students.

57. The development of The Toledo State College of Medicine should be expedited in order that an entering class of 100 students may be admitted as soon as possible.

58. A study will be undertaken in the near future to determine the need for another college of medicine in Ohio.

V

GRADUATE STUDY AND RESEARCH

MASTER'S DEGREE STUDY

59. There is a need to improve existing programs of study at the master's degree level, especially in the disciplines of the arts and sciences and in such professional fields of study as teacher education, business administration, and engineering.

60. Additional programs of study at the master's degree level beyond those now provided by state assisted universities should be developed in response to clearly indicated needs and in accordance with appropriate standards of quality.

DOCTORAL DEGREE STUDY

61. A major objective in state higher educational policy should be to strengthen and expand resources for graduate study at the doctoral degree level. The two principal public institutions engaged in instruction and research at the doctoral level are The Ohio State University and The University of Cincinnati.

62. Expansion of quality instruction and research at the doctoral level at other state assisted institutions is desirable in response to special circumstances and needs for doctoral graduates. Doctoral programs of an experimental or innovative character should be encouraged. At the same time, highly specialized programs involving high cost facilities should not be proliferated. The expansion of programs of graduate study and research at the doctoral level will be carefully coordinated by the Board of Regents.

RESEARCH

63. The performance of specially supported research, particularly of research financed by the federal government, through the state assisted universities of Ohio has not been so extensive as the population and graduate enrollment record of the state would appear to warrant. More attention should be given to the

research potential of state assisted universities in Ohio in order that graduate study can be strengthened and in order that Ohio scholars may have further opportunity to contribute to knowledge in their various fields of interest.

64. There is a need to improve and expand the research activity in almost every field of professional education at state assisted universities. In particular, research effort in the field of teacher education should be improved and expanded.

65. Closer working relationships should be achieved between industry in Ohio and the public universities in order that the requirements for basic knowledge in the technical developments of industry may be known to university research personnel and in order that the accumulation of knowledge in universities may be more readily communicated to industry development personnel.

66. The research program of the Ohio Agricultural Research and Development Center in Wooster should be fully coordinated with the instructional and research interests of the College of Agriculture and Home Economics of The Ohio State University.

VI

SPECIAL PROBLEMS

LIBRARIES

67. The library resources of the state assisted universities should be greatly strengthened, and careful attention should be given by each institution to the preparation and execution of plans to meet urgent library needs.

68. The Ohio Board of Regents intends to explore the desirability of establishing a central library coordinating center to encourage development of new library techniques and to promote inter-library cooperation.

EDUCATIONAL RADIO and TELEVISION

69. First priority in the development of expanded educational television facilities and activities should be given to classroom instructional needs, involving both direct and supplementary instruction. State assisted institutions should make certain that needed facilities are included in their capital improvement programs.

70. Second priority in the development of expanded educational television facilities and activities should be given to the needs of continuing education.

71. When it is practical to do so, a state-wide program for production, recording, simultaneous transmission, and distribution of television instructional materials should be developed.

72. Instructional radio and television facilities should be provided between central campuses and university branches.

CONTINUING EDUCATION

73. Continuing education in various professional fields is becoming increasingly important, and each state assisted institution should give attention to those needs within the scope of its own professional competencies and resources.

74. State assisted institutions should expand their continuing education activities in the form of short courses, seminars, workshops, and conferences. Some resources for these activities may be available under Title I of the federal Higher Education Act of 1965.

75. The only state supported program in continuing education at the present time is that provided by the Cooperative Extension Service in Agriculture and Home Economics of The Ohio State University. This program needs careful review in the light of the changing needs of farm families and of farm-related industries.

76. In the light of other pressing financial requirements, no additional state support of continuing education is recommended at this time.

TEACHING HOSPITALS

77. The teaching hospital is a major adjunct to medical education. It is at the same time a major public service, especially in the community where located. Careful attention should be given to meeting as large a part of the operating expense of a teaching hospital as possible from patient charges, hospital insurance plans, and welfare payments.

STUDENT ASSISTANCE

78. The state subsidy to state assisted institutions of higher education is a form of scholarship or fellowship assistance to students. Other than the Tuition Equalization Grant for students in privately sponsored institutions (Recommendation 6 above), no state supported program of student assistance is recommended at this time.

79. Private, voluntary gift support of scholarship funds should be encouraged, and state assisted institutions should take full advantage of federal government student assistance support.

80. The state government program to guarantee loans to students by commercial banks and other lending institutions is serving a useful purpose and should be expanded.

RETIREMENT and FRINGE BENEFITS

81. State assisted institutions should be permitted by law to provide benefits such as group life insurance, hospitalization and surgical insurance, and major medical insurance to their faculty and administrative staff.

82. The retirement provisions of Ohio law are generally satisfactory, but in order to improve faculty recruitment, state assisted institutions should be permitted by law to offer individual faculty and administrative staff members the option of retirement coverage in the State Teachers Retirement System or the Teachers Insurance and Annuity Association, a nation-wide, non-profit retirement system for college and university faculties.

VII

ROLES AND MISSIONS OF STATE ASSISTED INSTITUTIONS

TECHNICAL INSTITUTES

83. Technical institutes should be established in appropriate areas to offer two-year programs in technical education of higher education quality, with particular attention to engineering technologies, business technologies, agricultural technologies, and health technologies.

84. Technical institutes will be considered for districts with a minimum population of 50,000 people, with an evident unfulfilled need for technical education, and where other facilities are available for general education. The minimum desirable enrollment in a technical institution should be 500 full-time equivalent students.

COMMUNITY COLLEGES

85. Community colleges will be considered for counties or areas of contiguous counties with a minimum population of 100,000 people and with an evident unfulfilled need for two-year programs in technical and general education. Community colleges should be created only in areas where other institutions of higher education are not available or where other institutions appear unlikely to meet enrollment demand. Community colleges should be planned to have a minimum enrollment of 1,000 full-time equivalent students.

86. Community colleges provide lower division programs in general education and in technical education, and may also undertake public service activities (not subject to state financial support).

a. It is vitally important that the general education program of a community college be comparable to that provided by state assisted universities and university branches, and that the program maintain comparable standards of instruction.

b. It is desirable that community colleges give special attention and emphasis to their technical education programs.

UNIVERSITY BRANCHES

87. University branches will be considered for counties or groups of contiguous counties with a minimum population of 100,000 people and with an unfulfilled enrollment demand. A university branch should be planned to have a minimum enrollment of 1,000 full-time equivalent students at the lower division level.

88. A university branch should consist of a separate campus apart from the central campus of a public university, should have permanent facilities for day-time as well as for late afternoon and evening instruction, and should provide primarily a program in general education to students enrolled on a commuting basis. In cases where individual community circumstances warrant such service, arrangements may also be made to provide a technical education program.

89. A university branch preferably should be designated with the name of the community, such as The Ohio State University—Lima or The Ohio University—Portsmouth.

90. When a university branch reaches a full-time equivalent enrollment of 5,000 students, plans should be considered for creation of a separate state institution.

ACADEMIC CENTERS

91. State assisted universities should consider the desirability of establishing academic centers apart from their central campuses in communities where there is a demand for late afternoon and evening enrollment in general education, or in upper division and master's level courses in such professional fields as teacher education and business administration. Such an academic center might be located in a university branch facility, in a high school facility, or other appropriate facility. Such an academic center should have existing classroom, laboratory, and library facilities adequate for the courses offered.

92. An academic center should be designated with the name of the community, such as The Miami University—Piqua Academic Center.

THE UNIVERSITY OF AKRON

93. The University of Akron as authorized by Section 3359.01 of the Ohio Revised Code (S.B. 212 of the 106th General Assembly) should absorb the instructional programs, the property, the obligations, and the staff of the municipally sponsored University of Akron as of July 1, 1967. The University of Akron should become a full participant in the state system of higher education. The University should offer two-year programs in general education and technical education; baccalaureate programs in arts and sciences, teacher education, business administration, nursing, and engineering; master's degree programs in these same fields; a graduate professional program in law; and selected doctoral degree programs.

94. Through its Community and Technical College, The University of Akron should prepare to meet the enrollment demand for two-year general and technical education programs in its area.

THE BOWLING GREEN STATE UNIVERSITY

95. The Bowling Green State University should offer baccalaureate programs in arts and sciences, fine arts, teacher education, and business administration; master's degree programs in these same fields of study; and selected doctoral degree programs.

96. On the central campus The Bowling Green State University should plan primarily to accommodate upper division and graduate students.

THE CENTRAL STATE UNIVERSITY

97. The Central State University should offer baccalaureate programs in arts and sciences, teacher education, business administration, industrial technology, and music and fine arts; and master's degree programs in these same fields as needed and as resources permit.

98. The Central State University should seek to expand its enrollment to 5,000 full-time equivalent students as soon as possible.

THE UNIVERSITY OF CINCINNATI

99. The University of Cincinnati should continue to be a university under municipal sponsorship receiving local financial support in accordance with the provisions of Chapter 3349 of the Ohio Revised Code.

100. Through its University College and its branches, The University of Cincinnati should prepare to meet the enrollment demand for two-year general education programs in its area. The University of Cincinnati should continue to receive state financial support for all students enrolled in lower division programs in accordance with the provisions of Section 3354.01 (C) of the Ohio Revised Code.

101. The Board of Directors of The University of Cincinnati should explore with the Board of Regents the possibility and desirability of state assistance in support of the graduate programs and graduate professional programs of the University.

THE CLEVELAND STATE UNIVERSITY

102. The Cleveland State University should offer baccalaureate programs in arts and sciences, teacher education, business administration, and engineering, and should introduce graduate programs at the master's degree level in these same fields as soon as possible. Other programs should be introduced as needs arise and as resources permit.

103. The Cleveland State University and The Cuyahoga Community College should study and recommend to the Board of Regents desirable arrangements for expanding and coordinating opportunities for two-year general education programs in Cuyahoga County.

THE KENT STATE UNIVERSITY

104. The Kent State University should offer baccalaureate programs in arts and sciences, teacher education, business administration, journalism, architecture, fine and professional arts, and home economics; master's degree programs in these same fields; a graduate professional program in library science; and selected doctoral degree programs.

105. On the central campus The Kent State University should plan primarily to accommodate upper division and graduate students.

THE MIAMI UNIVERSITY

106. The Miami University should offer baccalaureate programs in arts and sciences, teacher education, business administration, fine arts, architecture, home economics, pulp and paper technology, and industrial technology; master's degree programs in these same fields; and selected doctoral degree programs.

107. On the central campus The Miami University should plan primarily to accommodate upper division and graduate students.

THE OHIO UNIVERSITY

108. The Ohio University should offer baccalaureate programs in arts and sciences, teacher education, business adminstration, engineering, architecture, journalism, dramatic arts and speech, home economics, industrial technology, and fine arts; master's degree programs in these same fields; and selected doctoral degree programs.

109. On the central campus The Ohio University should plan primarily to accommodate upper division and graduate students.

THE OHIO STATE UNIVERSITY

110. The Ohio State University should offer baccalureate programs in arts and sciences, teacher education, business administration, engineering, agriculture, journalism, social work, fine arts, music, architecture and landscape architecture, medical technology, physical therapy, occupational therapy, medical dietetics, dairy technology, food technology, restaurant management, nutrition, nursing, and home economics; master's degree programs in these same fields; graduate professional programs in optometry, pharmacy, veterinary medicine, law, dentistry, and medicine; and doctoral degree programs widely in the scholarly disciplines and learned professions.

111. On the central campus The Ohio State University should plan especially to accommodate upper division, graduate professional, and graduate students. The Ohio State University should maintain and expand its status as a major center of graduate study and research in the learned disciplines and in professional fields closely related to them.

112. Through its General College on a special campus The Ohio State University should prepare to meet the enrollment demand for two-year general education programs in its area.

113. The Ohio State University should undertake to provide for state-wide needs in specialized research facilities and specialized educational services as requested by the Board of Regents and as funds are provided.

THE UNIVERSITY OF TOLEDO

114. The University of Toledo as authorized by Section 3360.01 of the Ohio Revised Code (S.B. 212 of the 106th General Assembly) should absorb the instructional programs, the property, the obligations, and the staff of the municipally sponsored University of Toledo as of July 1, 1967. The University of Toledo should become a full participant in the state system of higher education. The University should offer baccalaureate programs in arts and sciences, teacher education, business administration, pharmacy, and engineering; master's degree programs in these same fields; a graduate professional program in law; and selected doctoral degree programs.

115. Through its Community and Technical College, The University of Toledo should prepare to meet the enrollment demand for two year general and technical education programs in its area.

THE TOLEDO STATE COLLEGE OF MEDICINE

116. The Toledo State College of Medicine should offer a graduate professional program in medicine as soon as facilities and resources permit.

117. The Toledo State College of Medicine or The University of Toledo should consider the desirability of adding a baccalaureate program in nursing.

THE WRIGHT STATE UNIVERSITY

118. The Wright State University as created by Section 3352.01 of the Ohio Revised Code (S.B. 210 of the 106th General Assembly) should be expected to come into operation as of July 1, 1967. This new state university should absorb the instructional programs, property, obligations, and staff of The Miami University branch and The Ohio State University branch on the Wright State Campus.

119. The Wright State University should offer baccalaureate programs in the humanities and social sciences, science and engineering, teacher education, and business administration; and master's degree programs in these same fields. Other programs should be introduced as needs arise and as resources permit.

VIII

THE ROLE OF THE OHIO BOARD OF REGENTS

120. The Ohio Board of Regents should remain a state-wide planning and coordinating agency for public policy in the field of higher education.

121. The Master Plan for Public Policy in Higher Education establishes the essential guidelines for all decisions and recommendations made by the Board of Regents. In implementation, this Master Plan is designed to be sufficiently flexible as to permit adjustment to changing circumstances. It will be periodically revised in the light of new experience, new objectives, new needs, and new knowledge.

122. The Board of Regents will give continuing emphasis and encouragement to improvement in the quality and academic excellence of all instructional programs.

123. The Board of Regents will give special attention to its authority to recommend the appropriation needs of state assisted institutions for current operating purposes, and will prepare its recommendations in terms of instructional cost standards by levels of study and by major programs.

124. The Board of Regents will encourage all state assisted institutions of higher education to achieve desirable economies in current operating expenditures and to make full use of additional sources of income other than state subsidies, such as federal goverment grants, alumni giving, and private gifts.

125. The Board of Regents will give special attention to its authority to recommend the appropriation needs of state assisted institutions for capital plant improvements, including land acquisition, and will prepare its recommendations upon the basis of replacement standards, space utilization standards, and space standards.

126. The Board of Regents will encourage various forms of inter-institutional cooperation among the state assisted institutions of higher education in Ohio in order to avoid wasteful duplication of facilities and uneconomical utilization of highly specialized resources of space and personnel.

PART TWO

Findings and Background Discussion

CHAPTER 1

HIGHER EDUCATION IN OHIO

There exists a variety of colleges and universities in Ohio. They vary in type of program from two-year colleges to universities; they vary from specialization in a single field of instruction such as music, art, or theology, to comprehensive instructional programs in many disciplines and professions. The total number of institutions listed by the Office of Education as of the autumn of 1965 is 78, but only 51 of these have been accredited by the North Central Association of Colleges and Secondary Schools for offering four-year baccalaureate programs. These institutions also vary greatly in size, from 137 students to over 40,000 students.

There is great variation in the sponsorship of the colleges and universities of Ohio. Among the 51 accredited institutions offering a baccalaureate program or more as of September, 1965, 41 operated under private, voluntary sponsorship. Three universities were sponsored by municipal governments and seven were sponsored by the state government.

The first issue of public policy which the Ohio Board of Regents has faced is that of state attitude toward these privately sponsored institutions. One possible attitude is to regard these colleges and universities as strictly "on their own," and to believe that exemption of their education plant from general property taxation is all the concession state government needs to make to them. A second possible attitude is to regard the educational and financial fate of these institutions as of some importance and to seek to avoid action which would hamper their operations. A third possible attitude is to consider the privately sponsored colleges and universities as a distinct asset and to seek positively to assist these institutions to maintain and even to expand their activity.

The recommendations of this Master Plan accept the third of these possible public policy positions. The Board of Regents desires positively to assist these privately sponsored institutions in ways which are appropriate to the traditions and the constitutional law of this nation.

The United States is one of the few countries in the world, if not the only country, in which institutions of higher education developed whose governance was self-perpetuating and whose sponsorship rested with citizens acting in their private capacity. The first nine colleges of this country, those established in colonial times prior to 1776, became privately sponsored institutions. This tradition of privately sponsored colleges extended to Ohio soon after its admission to the Union in 1803.

It is true that the first two colleges chartered by the Ohio General Assembly—The Ohio University in 1804 and The Miami University in 1809—were given land-grants in accordance with the provisions of the Northwest Ordinance of 1787 and were made bodies politic and corporate. Soon thereafter, however, privately sponsored colleges began to appear: Cincinnati College in 1819, Kenyon College in 1824, Western Reserve College in 1826, St. Xavier College in 1831, Granville College (Denison University) in 1832, Marietta College in 1835, Oberlin College in 1833, Muskingum College in 1837, Ohio Wesleyan University in 1842, Wittenberg College in 1845, Baldwin Institute in 1845, Mt. Union College in 1846, and Otterbein College in 1847. During the 1850's nine more colleges were created under private sponsorship. Still more such colleges, universities, seminaries, and institutes or conservatories have been founded in the past 100 years since 1865.

The privately sponsored colleges and universities in this country and this state serve a number of purposes. They have provided educational opportunity in addition to that afforded by the publicly sponsored institution. They have often set standards of academic excellence in student admissions, in faculty status and compensation, in the instructional process, in research performance, and in instructional expenditures. They have often emphasized the ethical obligations and the religious traditions of higher education to a greater extent than public institutions have been free to do. In all of these ways the privately sponsored colleges and universities have made their mark in American higher education and have become great intellectual assets of the nation and state.

Over the years there has been some shift in the proportion of students attending the privately and the publicly sponsored colleges and universities located in Ohio. This experience is summarized in Table 1 and Table 2. These data represent a head count of all students enrolled for course credit, not a full-time equivalent count. Moreover, these data include students attending institutions in addition to those accredited by the North Central Association. It will be observed that enrollment in private colleges and universities has expanded steadily since 1955, increasing by two-thirds between 1955 and 1965. Furthermore, there was one fewer private college in 1965 than in 1964 as a result of the transfer of the Fenn College property to The Cleveland State University.

TABLE 1

Fall Enrollment in All Ohio Colleges and Universities by Type of Sponsorship

Year	Total	Private	Municipal	Community Colleges	State	State Branches
1955	131,590	59,427	24,203		43,500	4,460
1956	142,118	64,085	25,517		46,214	6,302
1957	147,906	66,809	26,057		47,059	7,981
1958	156,385	71,019	26,722		49,554	9,090
1959	164,375	74,806	27,323		52,162	10,084
1960	175,139	79,034	29,073		56,039	10,993
1961	188,016	82,719	31,935		60,964	12,398
1962	202,374	87,071	34,720		66,078	14,505
1963	216,928	89,314	36,324	3,039	71,483	16,768
1964	241,835	95,670	38,753	6,852	81,812	18,748
1965	266,363	97,958	42,897	8,257	93,357	23,894

Source: Enrollment data are as published by the U. S. Office of Education in *Opening (Fall) Enrollment in Higher Education* for various years. State university enrollments have been divided between main campus and branches on the basis of other information available to the Board of Regents.

TABLE 2

Percentage Distribution of Fall Enrollment by Type of Sponsorship

Year	Total	Private	Municipal	Community Colleges	State	State Branches
1955	100.00%	45.16%	18.39%		33.06%	3.39%
1956	100.00	45.09	17.96		32.52	4.43
1957	100.00	45.17	17.62		31.82	5.39
1958	100.00	45.41	17.09		31.69	5.81
1959	100.00	45.51	16.62		31.73	6.14
1960	100.00	45.12	16.60		32.00	6.28
1961	100.00	43.99	16.99		32.42	6.60
1962	100.00	43.02	17.16		32.65	7.17
1963	100.00	41.17	16.75	1.40	32.95	7.73
1964	100.00	39.56	16.02	2.83	33.83	7.76
1965	100.00	36.78	16.10	3.10	35.05	8.97

Yet in spite of the actual numerical increase in the students attending privately sponsored colleges and universities, the proportion that private institutions represent of total Ohio enrollment has declined from 45 percent to just under 37 percent. This reduction in the proportion of students attending privately sponsored colleges and universities has resulted primarily from the emergence of the community colleges and the state university branches as parts of the higher education structure of Ohio. These two types of institutions represent additions to opportunity for higher education made available to the citizens of Ohio and additions to the proportion of the population interested in some higher education experience.

The expansion of enrollment by the privately sponsored colleges and universities is a major achievement for which they should be given full credit. This expansion has occurred in the face of very real financial difficulties. Excluding research funds, we learn from recent federal government data that for all privately sponsored colleges and universities student charges provided 50 percent of instructional income, endowment earnings provided 12.6 percent, gifts provided 16.9 percent, and other income provided 17.5 percent.[1] In many colleges as much as 70 or 75 percent of instructional income is derived from student fees, while the remaining 25 percent of income is obtained from endowment and annual gifts.

As enrollment grows in privately sponsored colleges and universities, income from endowment and from gifts must keep pace with the increased number of students. If this does not happen, then a larger proportion of income must be obtained through increased charges to students. If the charge to students does not increase, and if a proportionate increase in endowment capital and annual gifts does not occur, then expenditures per student decline and the quality of the educational program tends to fall. These financial facts of educational life have discouraged private colleges and universities from expanding their enrollment as much as they might otherwise be willing to do.

When the privately sponsored colleges and universities are unable to expand their enrollment in pace with the growing population of college age and in pace with the growing proportion of college age youth going to college, then a larger burden of enrollment must necessarily fall upon the state-assisted institutions of higher education. The facts of future enrollment needs are discussed in the next chapter, with projections of desirable growth in the enrollment of privately sponsored colleges and universities. There is some real doubt, however, whether the projected enrollment expansion in private institutions will be able to take place in view of the financial limitations confronting these institutions.

The recommendations of the Master Plan suggest two new or additional ways in which the State of Ohio might assist, directly or indirectly, the privately sponsored colleges and universities. First, it is proposed that the state establish a Tuition Equalization Grant Program for the benefit of full-time students who are legal residents of Ohio and who are enrolled in an accredited privately sponsored college or university offering a baccalaureate program. Secondly, it is proposed that further consideration be given to a program of facility assistance to these accredited privately sponsored colleges and universities located in Ohio, offering a baccalaureate program, and enrolling (or planning to enroll) half or more of their students from within the State of Ohio.

Several states do now provide a state scholarship program for the benefit of all of their students enrolling in privately sponsored or publicly sponsored colleges and universities. The States of New York, Pennsylvania, Illinois, and California have such programs at the present time. These state scholarships are in addition to many priately supported scholarship resources which may be administered directly by the colleges and universities.

In 1965 the federal government established an educational opportunity grant program to assist students needing financial aid in order to attend a college or university. This program is in addition to a work-study program and a student loan program earlier established by the federal government.

The Board of Regents considered the desirability of a state scholarship program and rejected the plan as neither necessary nor desirable under present circumstances. On the other hand, in recommending a Tuition Equalization Program, the Board is basing its proposal in part upon certain ideas embodied in a plan established by the State of Wisconsin in 1965.

If in providing such a program the General Assembly were to follow that plan, a Tuition Equalization Grant would be available only to a full-time student (one enrolled for 12 credit hours or more per semester) in an accredited four-year privately sponsored college or university. Moreover, this grant would be based upon economic need. A student in order to be eligible for such a grant would have to be a legal resident of Ohio enrolled in a privately sponsored college or university located in Ohio, and would be eligible for a grant for no more than eight semesters or twelve quarters. A student would not be eligible to receive a grant beyond the baccalaureate, and he could continue to receive a grant only if he maintained at all times the minimum grade point average required for graduation.

A Tuition Equalization Grant paid to a student should be related to the family income of his or her parents or guardians. If parents or guardians are providing support for two or more students attending a privately sponsored college or university at the same time, the income should be adjusted to consider the number of children eligible for these grants. The maximum amount of a grant in any one semester might be set at $250 and in any one quarter at $170.

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[1] See OE-52008.64, July 1965, "Preliminary Report of Financial Statistics of Institutions of Higher Education, Fiscal Year, 1964," Office of Education, U. S. Department of Health, Education, and Welfare.

It would seem desirable to omit from eligibility for a grant any undergraduate student enrolled in a pre-professional course in theology or religion, in view of the Ohio constitutional prohibition against laws giving preference to any religious society.

The scale of tuition grants per semester in relation to family income might be established as follows:

Family Income (before taxes)	Tuition Equalization Grant
$3,000 and under	$250
$3,001 to $3,500	$225
$3,501 to $4,000	$200
$4,001 to $4,500	$175
$4,501 to $5,000	$150
$5,001 to $5,500	$125
$5,501 to $6,000	$100
$6,001 to $6,500	$ 75
$6,501 to $7,000	$ 50
$7,001 and over	none

The purpose of such grants would be to assist students in meeting the tuition and other expenses of enrolling in privately sponsored colleges. A total grant of $500 would not begin to meet all the expenses of attending many privately sponsored colleges and universities. These expenses may rise as high as $2,700, including room and board but not including books, clothes, and incidentals. Yet, the Tuition Equalization Grant would provide assistance to a student in conjunction with other forms of student aid so that he might be able to enroll if he so desires in a privately sponsored college.

A Tuition Equalization Program is one providing direct assistance to students. It provides only indirect financial assistance to the privately sponsored college or university. The college is assured that there is at least a minimum student assistance related to family income which the State of Ohio would provide Ohio residents. Other forms of assistance could then be used to supplement the state grant for each student. Privately sponsored colleges use some of their general income for student assistance and if part of this drain could be eliminated, these colleges would have more income with which to meet instructional expenditures. In addition, some colleges might be able to increase their fee charges somewhat with the assurance the state was helping to make certain that no deserving student was denied an opportunity to enroll in a college if he desired to do so.

From the point of view of the State of Ohio, a Tuition Equalization Program would be economically advantageous. If privately sponsored colleges and universities do not expand and do not receive more income, then a larger enrollment burden will fall upon the state-assisted institutions. This burden will be more costly to assume than a program of tuition grants based upon family income.

With regard to the costs of a Tuition Equalization Grant Program, much would depend upon the final decisions made as to eligible income levels and the levels at which grants are finally set. The grant amounts suggested above are based upon the assumption that the program would make available to each student a standard proportion of his need for aid as determined by procedures commonly used in student financial aid offices. Many colleges and universities use a uniform procedure for determining an individual family's ability to support a student, following a system devised by the College Scholarship Service of the College Entrance Examination Board. These procedures have been used as a guide in suggesting a range of grant amounts which might be appropriate in an Ohio tuition equalization program. It is estimated that about one-quarter to one-third of otherwise eligible private college students in the state would qualify for a grant under the income patterns suggested here and that a maximum cost of $3 million a year could be anticipated. This would grow somewhat over a ten-year period of time but would not rise appreciably as more families increased their incomes in pace with the general economic growth of the state.

On the other hand, if the State of Ohio were to provide an opportunity for higher education to the same number of students at the state-assisted institutions, the expenditure outlay required would be approximately twice as much.

As a second approach to aiding private institutions, the Board of Regents has considered how it might help to provide assistance to these colleges and universities in expanding their physical facilities to accommodate more students. The principle of government assistance to privately sponsored colleges and universities for physical facilities has already been embodied in the federal government's Higher Education Facilities Act of 1963. This principle has also been recently adopted by Ohio in Section 3333.09 of the Revised Code (H.B. 20 of the General Assembly special session of 1964), under which buildings can be built by the state and leased to certain non-profit colleges and universities.

Under the terms of House Bill No. 20 as enacted, a non-profit college or university situated in the State of Ohio is declared to be a public college or university for the purpose of facility assistance. There is a further restriction in the current law which is that the non-profit college or university in order to be eligible for assistance must not be affiliated with or controlled by an organization "which is not primarily educational in nature." The possibility of removing this restriction should be considered.

As of 1965, the 41 privately sponsored, accredited colleges and universities in Ohio offering four-year undergraduate programs had religious affiliations as follows:

Non-sectarian	8
Roman Catholic	13
Methodist	4
United Church of Christ	2
United Presbyterian Mennonite	2
Society of Friends	2
Mennonite	1
American Lutheran	1
American Baptist Convention	1
Churches of God in North America	1
Protestant Episcopal	1
Disciples of Christ	1
Evangelical United Brethren	1
African Methodist Episcopal	1
Lutheran Church in America	1
Brethren	1
	41

In providing facility assistance to church-related colleges and universities, it is inevitable that constitutional questions will arise. The First Amendment to the Constitution of the United States provides that the "Congress shall make no law respecting the establishment of religion, or prohibiting the free exercise thereof . . ." By interpretation of the Supreme Court of the United States, the prohibitions upon state government action contained in the Fourteenth Amendment to the Constitution of the United States include the provisions of the First Amendment. The Fourteenth Amendment declares that "No State shall make or enforce any law which shall abridge the privileges and immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws." In addition, the 1851 Constitution of the State of Ohio in Article I, Section 7 (the Bill of Rights) contains these words:

> All men have a natural and indefeasible right to worship Almighty God according to the dictates of their own conscience. No person shall be compelled to attend, erect, or support any place of worship, or maintain any form of worship, against his consent; and no preference shall be given, by law, to any religious society; nor shall any interference with the rights of conscience be permitted. No religious test shall be required, as a qualification for office, nor shall any person be incompetent to be a witness on account of his religious belief; but nothing herein shall be construed to dispense with oaths and affirmations. Religion, morality, and knowledge, however, being essential to good government, it shall be the duty of the general assembly to pass suitable laws to protect every religious denomination in the peaceable enjoyment of its mode of public worship, and to encourage schools and the means of instruction.

There is no need here to enter into an extensive discussion of the court cases which bear upon the constitutional doctrine of religious liberty. There has not been a Supreme Court decision in a case where a religious organization is involved in providing education, hospital, or welfare services to a community. In the past, government financial assistance has been provided to agencies with a religious affiliation when they were performing a welfare or other essential community service. This is the general circumstance here. It is an educational service which the church-related college performs.

If a facility assistance program were to be established, various requirements for participation might be set. It would seem desirable to provide assistance only to accredited four-year institutions. No religious qualifications should be imposed for admission or graduation from the institution. At least half of the current or prospective full-time student body should be made up of Ohio residents. The college or university should plan to expand its enrollment in the next five years. The academic facility provided should be a general classroom building, a general laboratory building, or a library.

The Board of Regents might be authorized to build for a privately sponsored college or university on land deeded to the State of Ohio one or more instructional facilities. These instructional facilities might then be leased to the nonprofit, privately sponsored college or university by the Board of Regents for the sum of one dollar a year. All maintenance and operating expenses of the facilities would be defrayed by the leasing college or university. At the end of 30 years of such leasing the Board of Regents would be authorized to sell both the land and the building to the college or university involved for the price of one dollar.

The amount of facility assistance from state capital improvement funds thus provided a nonprofit, accredited, privately sponsored college or university might be calculated in some such way as follows. The total amount provided by the State of Ohio might be made to equal the reasonably anticipated full-time equivalent undergraduate enrollment expansion planned by the college or university over the next five years, multiplied by $1,000. Such a formula would serve to assist privately sponsored colleges and universities in maintaining and expanding their instructional facilities. Staff calculations of future capital plant needs for Ohio's publicly sponsored institutions have been based upon the expectation that new facilities would cost around $3,000 per full-time equivalent student. Thus, the formula for assisting privately sponsored colleges and universities would actually meet only about one-third of the total capital plant facilities needed by Ohio's privately sponsored colleges and universities to accommodate an expanding enrollment.

It might not be possible for the State of Ohio to finance all the requirements of this facility assistance program at one time. Under these circumstances, as much might be undertaken as available resources at any one time would permit. The total cost of this kind of facility assistance might be as much as 50 million dollars.

It must be emphasized that no privately sponsored college or university would be under any compulsion to participate in this kind of facility expansion program. Participation would necessarily be entirely a voluntary matter. It is not anticipated that such facility assistance by the State of Ohio or the student assistance earlier discussed, would change the nature of the sponsorship of private colleges and universities in Ohio. Nor would it alter the status of these institutions so that they would become state-assisted institutions in the legal sense of this phrase. State-assisted institutions are those receiving state financial subsidy of their current operating expenses.

If the privately sponsored colleges and universities in Ohio are to continue to perform their instructional mission effectively and if they are to continue to set standards of excellence for all of higher education, these institutions must receive increased support from all interested persons. This support will continue to be preponderantly private in nature, including support from student fees, endowment earnings, annual gifts from alumni and friends, gifts from private corporations and foundations, and other sources, but will come to include as well significant amounts of federal funds for special operating and capital purposes. The State of Ohio can help to meet the needs of these institutions without assuming responsibility for a major role in their financial support.

CHAPTER 2

ADMISSION AND ENROLLMENT

Admission

Section 3345.06 of the Ohio Revised Code provides as follows:

> "A graduate of the twelfth grade shall be entitled to admission without examination to any college or university which is supported wholly or in part by the state, but for unconditional admission may be required to complete such units not included in his high school course as may be prescribed, not less than two years prior to his entrance, by the faculty of the institution.
>
> "This section does not deny the right of a college of law, medicine, or other specialized education to require college training for admission, or the right of a department of music or other art to require particular preliminary training or talent."

This provision of Ohio law is commonly interpreted as requiring open access to all state-assisted institutions of higher education. It is noteworthy that the law applies to "*any college or university* which is supported wholly or in part by the state." As now written the law does not exempt any part or unit of the state system of higher education from its requirement.

It is expected that each institution of higher education receiving state financial assistance will abide by this legal instruction. At the same time, there are complications in observing this law. Does the law require each state-assisted institution to become as large as student enrollment demand may dictate? Are no effective limits to be placed upon the desirable size of any one institution? What is the relationship which should exist between the actual residence of large numbers of potential students in our major urban areas and the placement of state-assisted facilities for higher education?

The first issue which arises in connection with the current provisions of Ohio law is whether or not open-access to higher education for the high school graduate should continue to be the public policy of the state. The Board of Regents has recommended that the principle of open-access should be so continued. There are some citizens and faculty members in Ohio who have made representations on behalf of a selective admission policy to state-supported institutions. Such a policy can be defended upon the basis of several different arguments.

If a selective admission policy were enacted into law, enrollment expansion of state-assisted institutions could be slowed down or even halted. Expenditure increases in support of higher education could be slowed down. An improved instructional effort could be devoted to a smaller number of students. The educational attention given to students who are poorly qualified for college study could be reduced. All of these positions may be maintained with considerable justification.

On the other hand, a selective admission policy has its disadvantages as well as advantages. While it is feasible to determine those high school graduates who are most likely to be successful in obtaining a college degree, no selective process can ever be completely reliable in measuring both motivation and ability among prospective students. In a highly restrictive admissions process, perhaps eight or nine students out of each ten selected will obtain a college degree. But among those rejected there will also be a considerable number—the proportion will depend upon the degree of selectivity exercised—who might also successfully complete a college degree program. Furthermore, a selective admission program based upon ability and motivation to complete a four-year baccalaureate program ignores the interest of students who may desire and need two years of post-high school education.

The question then arises whether open-access to higher education means open-access to any institution or to any campus a student may select or whether it means open-access to a statewide system of higher education. The Board of Regents recommends that the answer here should be open-access to the system, not necessarily open-access to any particular institution or campus. Accordingly, the Board proposes to provide a network of two-year campuses in major urban areas throughout the state—along with new state universities in Cleveland, Dayton, Toledo, Akron and Youngstown—which will permit open-access to higher education.

Students enrolling on these two-year campuses who successfully complete their course of study and who desire to go ahead with a baccalaureate program should be encouraged to do so. Furthermore, by restricting the number of high school graduates admitted initially to a central campus, provision can be made to accommodate all students who do desire to complete a baccalaureate program. Necessarily, the transfer of credits from a two-year campus to a central university campus will be subject to the degree requirements and the performance standards established in each university for its various baccalaureate programs.

Where state-assisted universities are located in major urban areas—Cleveland, Cincinnati, Columbus, Toledo, Dayton, and Akron—and even elsewhere, it may be necessary in order to accommodate all would be commuting students to arrange to utilize available instructional facilities on a two-shift basis. One such shift might be planned to begin at 8:00 a.m. and to end at 3:00 p.m., and the other shift to begin at 3:00 p.m. and to end at 10:00 p.m.

In restricting freshmen admission at central campuses, state universities are expected to take into account the availablity of special programs not provided elsewhere (such as architecture, agriculture, nursing, music, and engineering), and to take into account the interest of those high school students eligible for advanced standing or for honors work. Beyond these demands, state universities would be expected to admit incoming freshmen to the central campus as of the autumn of an academic year in the chronological order of application, modified by such predicted grade point average as might be established by each institution.

Nothing in the practice of open-access to higher education is intended to preclude university staffs from counseling with a prospective student about his prospects for successful completion of a particular course of study, from assigning an entering freshman to a general education program as a prerequisite for possible transfer to a specialized curriculum, or from deferring admission of a student from an autumn term to some other term of the academic year.

Enrollment Expansion

All indications are that the State of Ohio must greatly expand its opportunities for college enrollment if its youth are to be properly served, if the economy is to be provided with the educated talent it will require, and if the state is to participate fully in future economic growth. College and university enrollment has expanded steadily in Ohio since 1955. Even more substantial growth must be anticipated in the next 15 years.

The expansion of higher education envisaged by this Master Plan has no precedent in our history, and its importance to our society is such as to demand a clear public understanding of its magnitude and scope.

Enrollment in Ohio colleges and universities has expanded steadily in the past ten years. The total enrollment at all institutions in terms of the autumn head count of full and part-time students reported by the U. S. Office of Education has grown from 132,000 in 1955 to 266,000 in 1965 (See Table 3). This is a sizeable growth indeed.

It is customary to "measure" enrollment in a state in terms of its relationship to the 18 through 21 year-old age group, or even to the 18 through 24-year age group. This is at best a rough indication of enrollment expansion among young people, since the actual individuals who enroll in colleges and universities do not necessarily coincide exactly with either age group. But from such data it is possible to observe enrollment trends in relation to a particular age segment of the population. In this way as the age group grows in number, we are also able to take into account the expansion in the proportion of persons in the age group who are enrolling in higher education.

It is important to note that Ohio has been experiencing an expansion in the proportion of young people enrolling in college. As shown in Table 3, the enrollment in relation to the age-group grew from 33 percent in 1955 to 44 percent in 1965. As we have said, this does not mean that 44 percent of all youth were going to college in 1965; it means only that enrollment is growing more rapidly than the age group proper.

TABLE 3
Fall Enrollment of All Ohio Colleges and Universities and Ohio College-Age Population

Year	Total[1]	18-21 Year Olds[2]	% Enrollment to Age Group
1955	131,590	400,251	32.8
1956	142,118	412,517	34.4
1957	147,906	420,188	35.1
1958	156,385	430,668	36.3
1959	164,375	449,277	36.5
1960	175,139	475,990	36.8
1961	188,016	507,740	37.0
1962	202,374	537,628	37.6
1963	216,928	553,770	39.2
1964	241,835	568,251	42.6
1965	266,363	601,400	44.3

[1] U. S. Office of Education, Opening (Fall) Enrollment in Higher Education, 1965 (Washington: U. S. Government Printing Office, 1965.)

[2] 18-21 year olds for the year 1955 through 1959 taken from Ohio's Future in Education Beyond the High School (The Ohio Commission on Education Beyond the High School, December, 1958).

One minor factor in explaining this percentage increase is that of out-of-state enrollment in Ohio colleges. As of 1955 it seems evident from reports prepared by the American Association of Collegiate Registrars and Admissions Officers[1] that the in-migration of students to Ohio and the out-migration just about balanced each other. More recently, a report of the Office of Education suggests that Ohio now imports about 8,000 more students a year than it exports[2]. Several of the private colleges and universities in Ohio in particular have a well-known regional and national reputation and are eager to recruit their students from throughout the United States.

The trend toward a higher proportion of the age group 18 through 21 years to be enrolled in higher education is nation-wide. The experience of Ohio shown in Table 3 is representative of this trend and is by no means out of line with events in other states. In 1965 the State of Ohio ranked 30th among all states of the United States in relationship of enrollment to the college-age group, and was also below the national average (See Table 4).

The enrollment load in Ohio is shared by privately sponsored and publicly sponsored institutions of higher education. The distribution of this enrollment from 1955 through 1965 has already been reported in Chapter 1.

Future Growth

At the same time that substantial enrollment growth has occurred during the past ten years, much attention in Ohio and in the nation has been given to the rising tide of enrollments which must be anticipated by colleges and universities during the late 1960's and throughout the 1970's and beyond. It has not been necessary in the development of this plan to bring new research to bear upon the numbers involved in Ohio's population and enrollment growth during the next decade and one-half. All of the pressures which must inevitably result in burgeoning enrollments have long since been discernible, although in some instances they challenge interpretation. The general birth rates and death rates which assure population growth are known. The young people who will enter our colleges and universities in 1980 were born in 1962, and they along with their older brothers and sisters have been carefully counted and recorded. That Ohio will receive other candidates for admission through the in-migration of families to this state is a known and predictable fact. The changing technology of our nation, the increasing affluence of its people, and the rising educational aspirations of all citizens assure that a larger and larger proportion of young people of college age will require education beyond the high school level. Not only are increased numbers of young people entering college, but more and more students are remaining beyond the baccalaureate to pursue graduate degrees. Further, increased numbers of adults are seeking to update or extend their general education or professional skills. While the actual rate of this increasing demand challenges precise measurement, the fact of its imminent rise seems clear.

Chart 1 illustrates the principal factor involved in Ohio's growing population. Births since World War II have far outstripped the number of deaths occurring in the state, and certainly within the period of this plan there is no prospect of this disparity lessening. As is shown by the legend at the bottom of Chart 1, the first wave of

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[1] Nelson M. Parkhurst, Coordinator of the Study, *The Home State and Migration of American College Students, Fall, 1958* (The American Association of Collegiate Registrars and Admission Officers, 1959).

[2] Edith M. Huddleston and Joan E. Reinthaler, U. S. Office of Education, *Residence and Migration of College Students, Fall, 1963* (Washington: U. S. Government Printing Office, 1964).

TABLE 4

Fall Enrollments Related to Total College Age Populations In Order of Rank by Percentage of Total College Age Population Enrolled

1965

50 States

State	18-21 yr. olds[1]	Fall enrolls.[2]	%	Rank
Utah	68,461	56,334	82.3	(1)
Arizona	95,542	69,429	72.7	(2)
Oklahoma	135,304	85,366	63.1	(3)
Massachusetts	320,331	200,512	62.6	(4)
Colorado	122,125	72,860	59.7	(5)
Minnesota	198,550	116,103	58.5	(6)
Nebraska	84,708	49,252	58.1	(7)
South Dakota	40,097	23,236	57.9	(8)
Kansas	140,134	80,621	57.5	(9)
California	1,296,860	728,091	56.1	(10)
North Dakota	37,730	20,904	55.4	(11)
Montana	36,701	19,976	54.4	(12)
Wyoming	19,272	10,398	54.0	(13)
Michigan	467,003	251,572	53.9	(14)
Wisconsin	229,985	123,650	53.8	(15)
Iowa	159,223	85,328	53.6	(16)
New Hampshire	37,000	19,581	52.9	(17)
Oregon	128,114	67,688	52.8	(18)
Connecticut	150,586	79,372	52.7	(19)
Vermont	24,857	13,079	52.6	(20)
Missouri	257,057	133,806	52.1	(21)
New York	961,439	491,998	51.2	(22)
Illinois	585,891	295,160	50.4	(23)
Rhode Island	64,913	32,202	49.6	(24)
Idaho	41,278	19,805	48.0	(25)
Indiana	301,695	141,409	46.9	(26)
New Mexico	65,494	30,006	45.8	(27)
West Virginia	103,849	46,805	45.1	(28)
Pennsylvania	618,318	273,795	44.3	(29)
Ohio	601,400*	266,363	44.3	(30)
Washington	233,547	103,131	44.2	(31)
Maryland	218,506	96,430	44.1	(32)
Delaware	29,437	12,334	41.9	(33)
Texas	689,334	288,615	41.9	(34)
Nevada	19,117	7,935	41.5	(35)
Arkansas	104,118	42,541	40.9	(36)
Louisiana	220,007	89,009	40.4	(37)
Kentucky	189,992	76,172	40.1	(38)
Florida	328,417	130,320	39.7	(39)
Tennessee	260,255	99,139	38.1	(40)
Mississippi	142,558	53,910	37.8	(41)
New Jersey	349,174	127,868	36.6	(42)
Maine	62,485	21,244	34.0	(43)
Hawaii	57,348	19,091	33.3	(44)
North Carolina	333,470	103,774	31.1	(45)
Alabama	218,101	66,515	30.5	(46)
Virginia	305,951	86,431	28.2	(47)
Georgia	284,934	80,271	28.2	(48)
South Carolina	180,957	40,804	22.5	(49)
Alaska	22,948	4,657	20.3	(50)
Service Schools, District of Columbia, and Outlying Parts	63,571 (D.C.)	115,379		
Total United States	11,708,144	5,570,271	47.6	

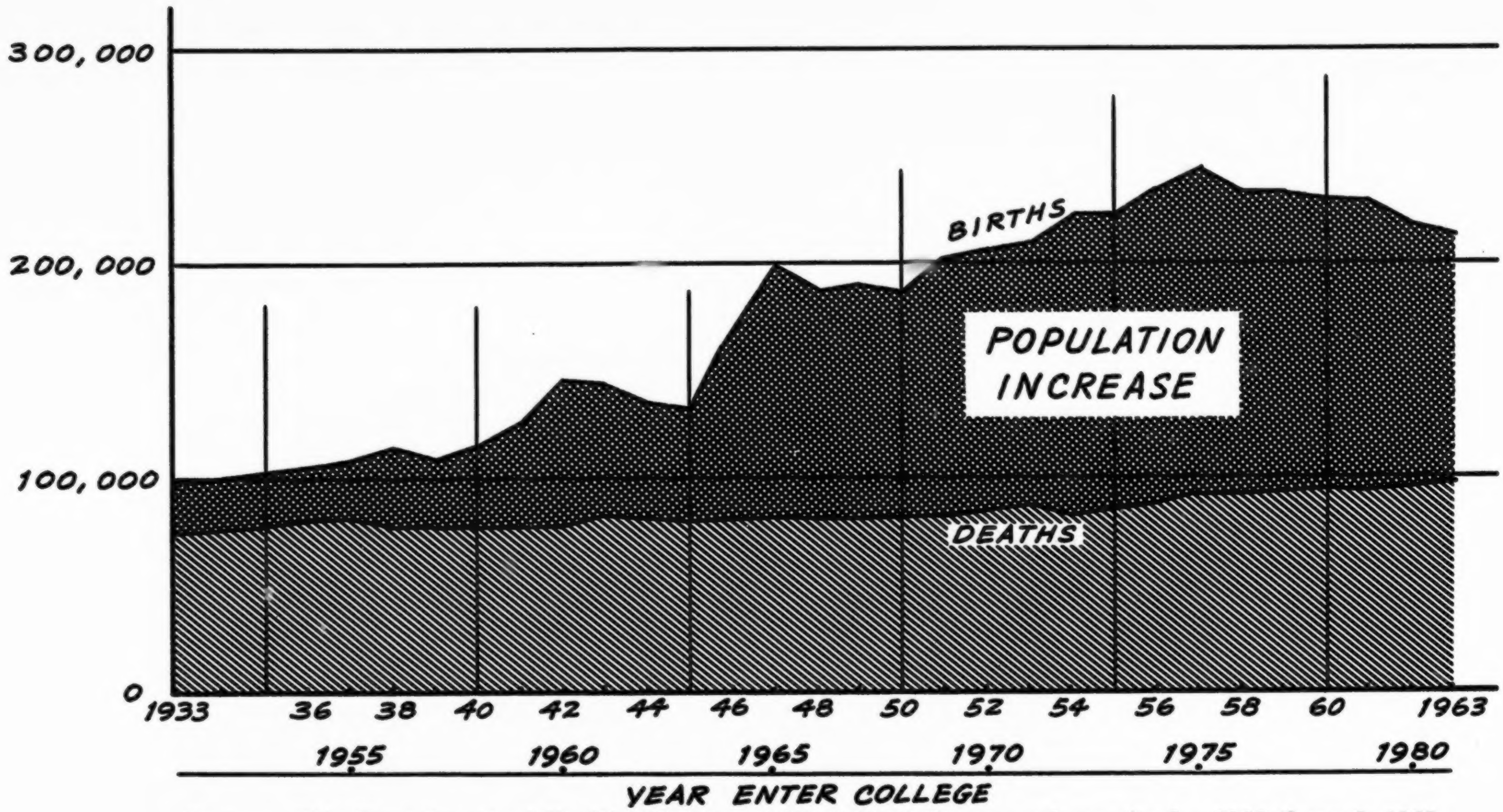
Source of Data: [1] Ronald B. Thompson, *Enrollment Projections for Higher Education, 1961-1978* (American Association of Collegiate Registrars and Admissions Officers, 1961).

[2] U. S. Office of Education, *Opening (Fall) Enrollment in Higher Education, 1965* (Washington: U. S. Government Printing Office, 1965).

* Revised from estimate of 607,524 used by Thompson.

the post-war population surge has now reached college age. Between the fall of 1963 and the fall of 1965, the number of persons 18 years of age increased by 50 percent.

CHART 1
Ohio Births and Deaths
1933-1963



Source: Ohio Department of Health, Division of Vital Statistics annual reports for 1960 through 1963.

This phenomenon, of course, is typical of the national experience, and while this plan is primarily concerned with persons already born, the continuing nature of our growth potential is reflected in population estimates which guide planners in all areas of government and private enterprise. On the basis of population counts made during the 1960 federal census, the U. S. Bureau of the Census has projected the nation's future growth.[4] Estimates for the period beginning with 1960 and extending to the year 1980 are shown in Table 5.

TABLE 5

Population, 1960 and Projections to 1980
Total United States

Year	*Population*
1960	180,677,000
1970	208,996,000
1975	225,870,000
1980	245,313,000

If Ohio continues to represent some 5½% of the nation's total population during the intervening years before 1980, we must anticipate a count of over 13 million citizens in that year. The Ohio Department of Development has in fact suggested that Ohio's proportion of the nation's population will continue to run somewhat over 5 percent, by independently projecting state population growth as shown in Table 6.

TABLE 6

Ohio Population, 1960 and Projections to 1980

Year	Population
1960	9,706,397
1965	10,501,234
1970	11,510,163
1975	12,390,047
1980	13,269,932

Source: Total Population, by County, Ohio Quinquenially, 1965-1980 (Division of Economic Research, Ohio Department of Development, 1962)

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[4] U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, Series P-25*, No. 286, Series B, (Washington: U. S. Government Printing Office, 1965).

Manpower Demands

An expanding college-age population group, of course, is only one factor involved in the rise of college enrollments. The educational needs of increased numbers of young people and adults must be seen in terms of the changing demands for educated manpower in the American labor force. Such demands underlie much of the need for increased educational services and help to shape the character of instructional programs.

A great change is taking place in the needs of the labor force for educated talent, and it is evident that the states and nation cannot experience continued economic growth and development without educated manpower.

The educational attainment of participants in the American labor market has risen markedly in recent years and promises to rise more sharply in the years ahead. That such educational attainment responds to very real needs for trained manpower is reflected in proportionately higher unemployment rates among the less well prepared workers. It is also clear that the occupational categories which are increasing most rapidly are those requiring the greatest amount of formal education and training. Furthermore, it is evident that without great expansion the present capacities and programs of our educational system will not be equal to the task of preparing large numbers of additional highly skilled workers.

While it is clear that advanced education is fast becoming a prerequisite for success in the higher level jobs, and that these jobs are those most needed by our advancing economy, it is extremely difficult directly to relate these needs to specific educational facilities and programs. Program requirements both at the baccalaureate level and beyond, and at the associate degree, sub-professional level, will be discussed elsewhere in the document. But it is worthy of note here that some observers see the period of educational attainment which begins with high school graduation and stops short of the baccalaureate degree as the key to developing educational systems. This is the area of sub-professional and technical training extending across the entire spectrum of pre-occupational education fields. One such observer, Norman Harris, sees 50 percent of America's young people requiring training in this post-high school area by 1970. [10]

Harris proposes that the national labor force will be such as to profit by some kind of post-high school training for 68 percent of our young people by 1970.

While the precise timetable of change is problematical, there is little doubt about the general magnitude of the job facing our educational system.

There is little doubt either that our present capacities are inadequate. In 1960, only 15 percent of Ohio's young adults had completed as much as two years of education beyond the high school level. Of the first age group beyond the usual ages for formal education and training (25-29), only 60 percent of Ohioans had completed high school and only 10 percent had graduated from college. [11]

Enrollment Projections

During the past six or seven years several study groups and individuals have had occasion to estimate future enrollments in Ohio's universities and colleges. All of these efforts have attempted to project historical experience in the enrollment of both full and part-time degree credit students. For the state universities these counts have included students enrolled in the branches as well as on the main campuses.

In 1958 the Ohio Commission on Education Beyond the High School observed actual enrollments through 1955 and projected an annual count to the year 1970.[12] The results of this effort are shown in Table 7 below, as the "1958 projection."

In 1961, Ronald B. Thompson of The Ohio State University noted actual enrollments through 1960 and calculated likely counts to the year 1978.[13] These estimates are shown in Table 7 as "1961 projection".

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[10] Norman Harris, *Technical Education in the Junior College* (Washington: American Association of Junior Colleges, 1964).

[11] 1960 Census, U. S. Dept. of Commerce, Bureau of the Census.

[12] *Ohio's Future in Education Beyond the High School* (The Ohio Commission on Education Beyond the High School, 1958).

[13] Ronald B. Thompson, *Enrollment Projections for Higher Education, 1961-1978* (The American Association of Collegiate Registrars and Admissions Officers, 1961).

In 1962, John X. Jamrich of Michigan State University was retained by the Ohio Legislative Service Commission to study the future capital needs of Ohio's state universities and college. As a base for that study, Dr. Jamrich projected total enrollments in all Ohio institutions biennially to the year 1972.[14] These counts are listed in Table 7 as "1962 projection".

Finally, the Academy for Educational Development has taken another look at prospects for future enrollments in Ohio and has reported a quinquennial projection to the year 1980. This series is listed in Table 7 as "1964 projection".

Each of these estimates has been based upon two factors: the total college-age population in a given year (ages 18-21 years), and the percentage of that number which actual enrollments will represent. Direct comparisons between the several projections on the first of these factors are not profitable because annual census data are not available against which to test estimates of the college-age population. It is possible, however, to demonstrate that the second factor, the percentage which enrollments will represent of the total population group, has been the one consistently underestimated.

TABLE 7

Recent Projections of College and University Enrollment
State of Ohio
1960 - 1980

Year	Actual Enrollment	1958 Projection	1961 Projection	1962 Projection	1964 Projection
1960	175,139	170,050			
1961	188,016	184,425	191,489		
1962	202,374	193,174	203,371		
1963	216,928	198,216	211,076		
1964	241,835	210,801	224,283	220,620	
1965	266,363	233,729	247,870		257,727
1966		255,514	273,754	265,308	
1967		279,808	304,323		
1968		290,080	318,050		
1969		294,852	324,382		
1970		306,854	338,737	332,291	393,374
1971			353,836		
1972			376,691	359,224	
1973			393,542		
1974			413,031		
1975			435,393		518,263
1976			448,303		
1977			461,329		
1978			467,036		
1979					
1980					627,835

The 1958 projection assumed that actual enrollments as a percentage of the college-age population group would increase .5 of 1 percent each year. This progression would by 1965 have resulted in an enrollment rate of 37.9 percent. In fact, 1965 actual enrollments represent 44.3 percent of the college-age population base set by that study, an increase of 1.1 percent per year rather than the estimated .5 of 1 percent.

In the 1961 projection, Dr. Thompson added .8 of 1 percent each year to his enrollment/population percentage base calculated for the year 1960. This annual increment represented the actual experience of the ten-year period immediately preceding the base year, and suggested that enrollments in 1965 would stand at 40.8 percent of the college-age population. While the five-year period since these estimates were made may be too brief to warrant a final judgment on the accuracy of the series, the fact is that actual 1965 enrollments represent 43.8 percent of Thompson's college-age population for the year. This increase over five years is equal to 1.4 percent per year as compared with the estimate of .8 of 1 percent.

While the period of time which has elapsed since the base year of 1962 estimates is even more brief, Dr. Jamrich's estimated increase in the enrollment/population percentage of .7 of 1 percent annually also has been far exceeded.

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[14] John X. Jamrich and Harold L. Dahnke, *Ten-Year Building Needs for Higher Education in Ohio, 1962-1972* (East Lansing: Michigan State University, 1963).

It seems evident from these experiences that the simple extension of relatively long-run historical averages will not adequately predict future enrollments. Particularly when we consider present plans for rapidly expanding urban commuter centers, enrollment growth created by longer periods of graduate and professional study, and a broadening of the scope of higher education to encompass new fields of technical education, we must expect unusual changes in enrollment experience. For purposes of this plan it is anticipated that the percentage which enrollments represent of the total college-age population will increase 1.65 percent per year until the year 1980. This rate of growth is related to college-age population estimates in Table 8 and a year-by-year projection of enrollments is developed. The college-age population estimates used in Table 8 have been recalculated by the Board of Regents' staff, resulting in an enrollment projection somewhat higher than the "1964 projection" reported in Table 8.

TABLE 8

Projected College and University Enrollment
State of Ohio
1965 - 1980

Year	College-Age Population	Estimated Enroll./ Population Percentage	Projected Enrollment
1965	601,400	44.29	266,363 (actual)
1966	654,771	45.86	300,278
1967	709,337	47.51	337,006
1968	758,154	49.16	372,709
1969	771,846	50.81	392,175
1970	779,109	52.46	408,721
1971	800,478	54.11	433,139
1972	826,391	55.76	460,796
1973	860,551	57.41	494,042
1974	885,272	59.06	522,842
1975	914,944	60.71	555,463
1976	942,835	62.36	587,952
1977	954,179	64.01	610,770
1978	961,150	65.66	631.091
1979	954,522	67.31	642,489
1980	939,629	68.96	647,968*

* This number is rounded to 650,000 elsewhere in this document for ease of reference.

If in fact the demand for education beyond the high school increases at this high rate, the greatest numerical and proportional growth must occur at the public institutions. The Academy for Educational Development advises that on the basis of estimates furnished by private colleges and universities, such institutions can be expected to double their enrollment capacities between now and the year 1980. As shown by Table 9, an increase of this magnitude on the part of the private colleges and universities will require the public sector to nearly triple its capacity to serve students.

TABLE 9

Projected Enrollment in Public and Private
Colleges and Universities
State of Ohio
1965-1980

Year	Total Estimated Enrollment	Private Institutions	Public Institutions
1965 (Actual)	266,363	97,958	168,405
1970	409,000	130,000	279,000
1975	555,000	165,000	390,000
1980	650,000	200,000	450,000

It is also likely that an increasing percentage of total enrollments will be made up of students going to school on a part-time basis. The Academy For Educational Development suggests that with increasing numbers of young people and adults requiring advanced training and retraining, probably 40 per-cent of all enrollments by 1980 will be on a part-time basis.

Beyond this, as attention is turned for the first time to broad-scale programs of technical education designed in some large part to be of two year duration, substantial increases will occur in the number of students enrolled in such associate degree programs. During the fall term of 1965, Ohio enrollments in occupational or general studies reported by the U. S. Office of Education as "not chiefly creditable toward a bachelor's degree", totaled 12,143, and were divided among types of institutions as follows:

Private	3,903
Municipal	4,086
Community College	3,170
State	984
	12,143

Historically such enrollments have made up a small proportion of total post-high school activity in Ohio and have been excluded from consideration in enrollment projections. It must be expected, however, that a significant portion of the general enrollment growth anticipated by this plan will occur in the associate degree areas as new facilities and programs become available.

Two-Year "Live-at-Home" Opportunity

The Master Plan of the Ohio Board of Regents recognizes that the greatest number of new student spaces in the years ahead must be provided at the lower division level, that enormous cost reductions can be made by providing "live-at-home" opportunities for post-high school education, and that lower division instruction is sufficiently less complicated than the higher levels of collegiate study that it can be successfully separated from a university setting and be dispersed geographically throughout the state.

The greatest burden in terms of numbers of students enrolled at various levels of study during the years ahead will inevitably fall on the first two years beyond high school. Studies of student retention generally report that less than one-half of all students enrolling in collegiate programs as freshmen will complete a baccalaureate program in the normal four years of study. Students remaining in college beyond the normal four years may raise the proportion eventually receiving an undergraduate degree as high as 60 percent. In any given group of college students, nevertheless, it is clear that many more will be enrolled at the lower division level than will have attained the rank of junior or senior. During the last year for which such data have been estimated, enrollments in all Ohio colleges and universities were spread among the various levels as shown in Table 10.

TABLE 10

Enrollment by Level of Student Rank
All Ohio Colleges and Uuiversities
Fall Term, 1964

Level	*No. of Students*	*%*
Freshman	89,000	37
Sophomore	49,000	20
Junior	40,000	17
Senior	36,000	15
Graduate	21,000	9
Professional	6,000	2
	241,000	100

These data indicate that in 1964, 57 percent of all Ohio enrollments were at the lower division level while only 32 percent were at the rank of junior or senior. The graduate level accounted for 9 percent of total enrollments, while something over 2 percent of all students were enrolled in professional programs. If these general relationships were simply to continue unchanged as enrollments grow to 650,000 in the year 1980, nearly twice as many new student spaces would be required at the lower division level as would have to be developed for juniors and seniors. There is good reason to anticipate that lower division enrollments will actually increase beyond present proportions as new facilities are made conveniently available to the homes of large numbers of potential students, and as lower division curricula are broadened to include new general and occupational programs of two years duration. It is significant to note in this regard that in the state of California, where the geographical dispersion of two-year facilities is well established and where two-year curricula are fully developed, well over 70 percent of all enrollments occur at the lower division level. As was noted above, about 57 percent of Ohio's enrollments presently occur at the lower division level. It would not be unreasonable to estimate that for each new student space required during the next fifteen years at the upper division level, nearly three lower-division spaces must be added.

Of all the suggestions that might be made for the organization of a greatly expanded state-wide system of public higher education in Ohio, probably no other could hold such clear promise of drastically reducing the costs of higher education to the families of students as the proposal to make two years of college work available on a "live-at-home" basis. In turn, such cost reduction promises a major increase in the effectiveness of Ohio's open-access policy. Certainly as avoidable costs are eliminated, more students will be able to claim their right to participate in education beyond high school. At the present time, parents planning to support a son or daughter on a residential basis at one of our state supported universities must be able to pay from $1300 to $1400 per year in fees and charges, in addition to such day-to-day miscellaneous expenses as the student may incur. About $800 of that annual amount or nearly 60 percent of all costs must be paid simply to maintain the student in a dormitory and to pay for his meals at a university dining hall. And even this substantial amount represents a minimum cost made possible only by the very efficient management of such room and board facilities by the universities. It is clearly possible through the geographical dispersal of lower division programs throughout the state to greatly reduce these costs to parents by enabling the student to remain in his home, where the costs of his maintenance are minimal within well-established family routines, throughout two years of college attendance.

Finally, the separation of the first two years of collegiate instruction from the university central campus setting is feasible from an educational point of view. Because of the relative simplicity of lower division programs as compared with more advanced levels where greater specialization of student interests and needs properly occurs, the organization of such programs within widely separated two-year institutions has proven successful in a number of states across the nation. Indeed, such dispersal of opportunity has not only made "open-access" more meaningful where it has occurred, but it has allowed closer contact between higher education and the communities within which institutions are established, and thereby fostered healthy experimentation into the design of more meaningful programs of study for the young people of those communities. Special attention must of course be given to proper articulation between two-year programs and the four-year programs to which students may advance. No insurmountable problems of any kind, however, appear to recommend against the basic policy direction proposed for Ohio.

Central Campuses Dedicated to Upper Level Instruction

The second major theme running through the Master Plan which will have a vital effect upon the economical and effective operation of Ohio's system of public higher education, calls for the existing state universities to give increasing attention during the years ahead to serving upper division undergraduate and graduate and professional students. This proposal is a counterpart of the suggestions just discussed for dispersing lower division opportunity throughout the state, and can be carried out only as new two-year commuting facilities actually come into being. Two principal factors suggest the wisdom of giving to the existing state universities a mandate such as proposed here. The first is an educational factor, the second largely an administrative and cost factor.

By the nature of our educational processes the junior and senior student poses a different set of problems for our instructional organizations than does the freshman and sophomore student. On reaching the upper division a student moves out of the general education phase of his curriculum, where he shared many classes with students having diverse goals and interests, into the more specialized phase of his education pointing more directly toward his particular educational goal. In so doing he finds himself generally enrolled in smaller classes, more frequently studying under the direction of senior faculty members, using more specialized and more expensive equipment and laboratory facilities to support his study, and requiring more varied and less "standard" library resources. These are the demands which generally require that upper division instructional resources be more complex and hence strikingly more expensive, even at a university whose student body is sufficiently large as to make all reasonable economies possible. These are the needs already being served by the extremely valuable human and physical resources developed over many years by the existing state universities. It would appear to be sound educational policy as well as sound fiscal policy to avoid an attempt to duplicate the very extensive resources required for upper division instruction, as long as we can capitalize on strengths we already have by asking the existing universities to adjust their plans sufficiently to serve increasing numbers of upper division students. Indications are that substantial shifts of emphasis by the state universities toward serving fewer lower division students and larger proportions of upper division and graduate students, can make available new enrollment capacity of high quality at the upper levels sufficient for a number of years to come. This matter will be covered again later in the Master Plan, when the roles and missions of various institutions are discussed.

The second factor which suggests the wisdom of asking the existing state universities to give greater attention to upper level students is an administrative and cost factor. By enrolling fewer lower division students the state university will be able to avoid or at least substantially to retard the great increases in capital development required in recent years to house and feed increasing numbers of students. The universities have in the past felt a particular responsibility to house and feed, and rather closely to oversee the activities of students who must live away from home while attending college. This has required enormous investments in dormitories, dining halls, and recreational facilities, as well as operating costs arising from the support of staffs to supervise the activities and off-hours recreation of these residential students. Not only have capital investments of the order of $4000 to $5000 per student been required, but the rate of residential enrollment growth has exceeded debt retirement schedules, thus resulting in steady increases in the levels of charges which must be assessed against students in order to maintain the systems in a self-liquidating state. Looking to the future it seems likely and proper that a lessening of university restrictions on the living arrangements and off-hours activities of older students will occur, and that obligations for closely supervising students while away from their parents' homes will relate primarily to the younger, freshman and sophomore students. If this change in attitude toward supervision of the more mature student does in fact occur, that development when combined with a reduced enrollment of lower division residential students would take a considerable amount of pressure off of the dormitory and dining hall building programs of the universities. Certainly this is not to suggest that such building programs should stop, for continued growth at the upper levels may require additional residence hall construction if the private housing resources of the community surrounding a university are not adequate. It is simply to suggest that the shift of attention to serving larger numbers of upper division students may retard the very rapid increase in need for residence facilities and accompanying increases in campus congestion, expansion of land requirements for recreation and social facilities, expansion of utilities systems, and so forth.

It is proposed that certain planning objectives be set for each state university which will describe the maximum number of incoming freshmen residential students for which the university should provide spaces during the period covered by this plan. The objectives listed below are designed to facilitate the shift of emphasis from lower to upper division students as discussed above, and are consistent with the rates of shift and over-all institutional sizes inherent in proposals made later in this plan under the heading of roles and missions of individual institutions.

	Freshman Residential Enrollment Objective
The Bowling Green State University	3,000
The Central State University	3,000
The Kent State University	4,000
The Miami University	3,000
The Ohio University	4,000
The Ohio State University	6,000

These goals are consistent with the general proposal of this plan that these six state universities collectively increase central campus capacities from about 85,000 in 1965 to about 120,000 in 1980, and by appropriate individual actions accomplish a spreading of that collective capacity among the several levels of enrollment as follows:

lower division	30%
upper division	45%
graduate/professional	25%

Individual institutional goals for achieving this aggregate spreading among the several levels will be discussed later in this plan.

At the same time that it is suggested the established state universities limit the number of lower division students served on a residential basis, it is also proposed that these institutions along with the municipal universities, the university branches, and community colleges provide open-access to all students who wish to attend on a commuting basis. This will insure that students living in the immediate vicinity of any state-assisted college or university will have an opportunity to live at home while attending the first two years of college, even though facilities might be inadequate to guarantee entrance on a residential basis.

Ohio Population and Enrollment Distribution

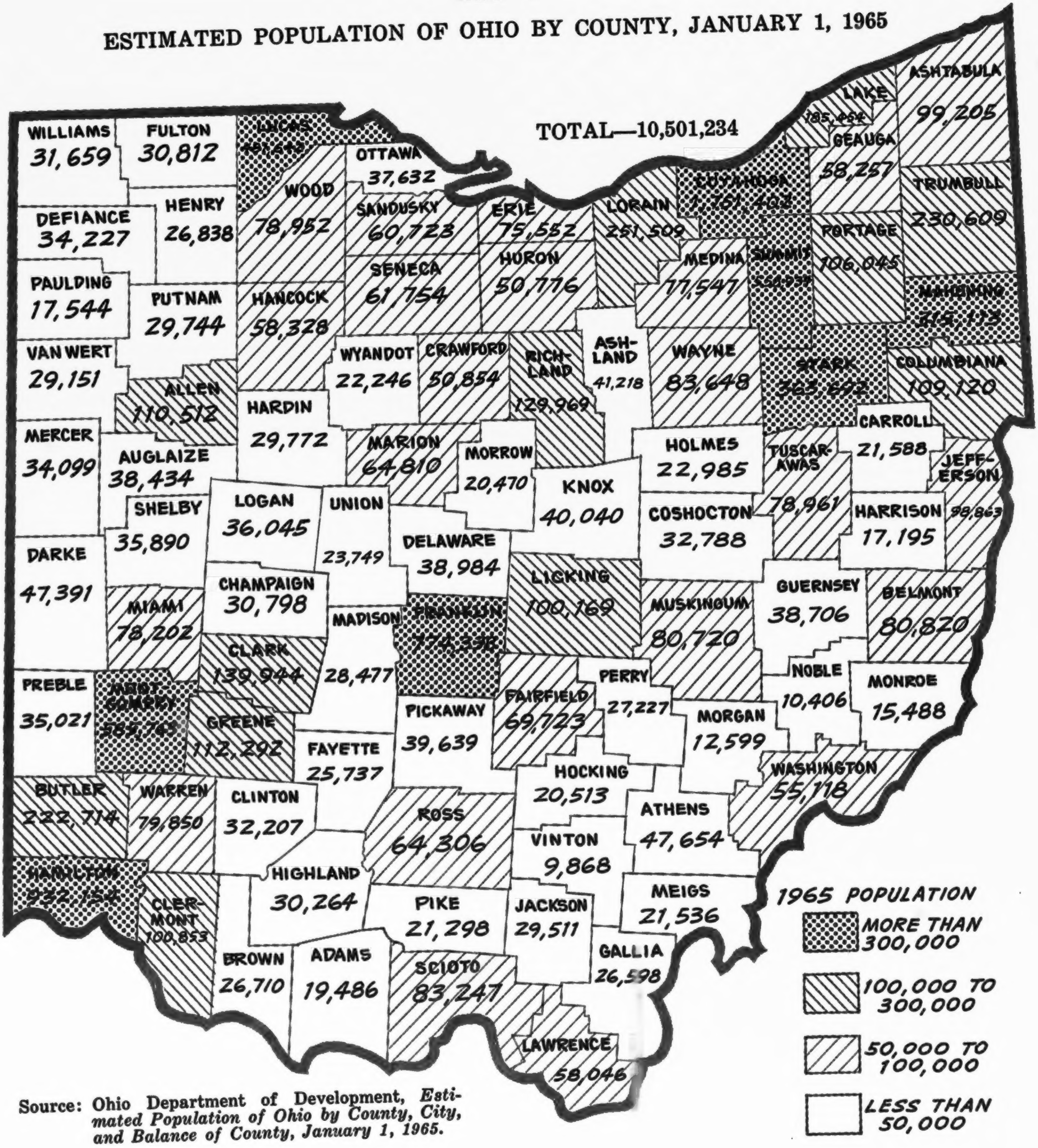
Two very important additional factors in the development of a state wide system of public higher education are the present and future patterns of population distribution throughout the state, and the effect which institutional location may have upon the college-going habits of Ohio's young people. These matters are critical both to the reasonableness of the proposal that two years of post high school education be commonly available on a commuting basis, and the general intention of this plan that open-access to higher education be enhanced rather than limited.

The population of Ohio at the time of the 1960 census totaled 9.7 million persons. As of January 1, 1965, the population was estimated at 10.5 million persons.

As demonstrated by Map 1, this population is quite heavily concentrated in a few counties, which are the major urban centers of the state. Of the 1965 population, better than one-half was to be found in eight counties: Cuyahoga, Hamilton, Franklin, Montgomery, Summit, Lucas, Stark, and Mahoning. Another 17 percent of the population was to be found in the next 12 counties having over 100,000 population in 1965: Lorain, Trumbull, Butler, Lake, Clark, Richland,

MAP 1

ESTIMATED POPULATION OF OHIO BY COUNTY, JANUARY 1, 1965


TOTAL—10,501,234
WILLIAMS 31,659
FULTON 30,812
LUCAS
OTTAWA 37,632
WOOD 78,952
DEFIANCE 34,227
HENRY 26,838
SANDUSKY 60,723
ERIE 75,552
LORAIN 251,509
CUYAHOGA 1,751,402
LAKE 185,464
GEAUGA 58,257
ASHTABULA 99,205
TRUMBULL 230,609
PORTAGE 106,045
SUMMIT 554,937
MEDINA 77,547
PAULDING 17,544
PUTNAM 29,744
HANCOCK 58,328
SENECA 61,754
HURON 50,776
MAHONING 319,173
VAN WERT 29,151
WYANDOT 22,246
CRAWFORD 50,854
RICHLAND 129,969
ASHLAND 41,218
WAYNE 83,648
STARK 363,692
COLUMBIANA 109,120
ALLEN 110,512
HARDIN 29,772
MERCER 34,099
AUGLAIZE 38,434
MARION 64,810
MORROW 20,470
KNOX 40,040
HOLMES 22,985
TUSCARAWAS 78,961
CARROLL 21,588
JEFFERSON 98,863
SHELBY 35,890
LOGAN 36,045
UNION 23,749
DELAWARE 38,984
COSHOCTON 32,788
HARRISON 17,195
DARKE 47,391
CHAMPAIGN 30,798
LICKING 100,169
GUERNSEY 38,706
BELMONT 80,820
MIAMI 78,202
MADISON 28,477
FRANKLIN 774,398
MUSKINGUM 80,720
CLARK 139,944
PREBLE 35,021
MONTGOMERY 585,745
GREENE 112,292
FAIRFIELD 69,723
PERRY 27,227
NOBLE 10,406
MONROE 15,488
FAYETTE 25,737
PICKAWAY 39,639
MORGAN 12,599
HOCKING 20,513
WASHINGTON 55,118
BUTLER 222,714
WARREN 79,850
CLINTON 32,207
ROSS 64,306
ATHENS 47,654
VINTON 9,868
HAMILTON 932,154
CLERMONT 100,853
HIGHLAND 30,264
PIKE 21,298
JACKSON 29,511
MEIGS 21,536
GALLIA 26,598
BROWN 26,710
ADAMS 19,486
SCIOTO 83,247
LAWRENCE 58,046
1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

Source: Ohio Department of Development, *Estimated Population of Ohio by County, City, and Balance of County, January 1, 1965.*

Greene, Allen, Columbiana, Portage, Clermont, and Licking. This meant that one-third of the population of Ohio was to be found in the remaining 68 counties. Of these 68 counties, 23 have populations ranging from 50,000 to 100,000 and collectively account for another 16 percent of Ohio's total population. All told, nearly 90 percent of the state's population is accounted for by 43 counties, each having a population of more than 50,000.

As might be expected, (see Table 11) Ohio's populous counties generally send the largest numbers of students to the state-assisted colleges and universities. The urban counties, however, send disproportionate numbers compared with their populations due to location of universities in the cities of Columbus, Cincinnati, Akron, and Toledo. The eight counties with populations over 300,000 represent 55 percent of Ohio's population. Those same eight counties include the place of residency for 66 percent of all Ohio students enrolled in the state-assisted institutions. Counties ranging in population from 100,000 to 300,000 and from 50,000 to 100,000 account for 17 percent and 16 percent of Ohio's total population, respectively. These same counties provide 13 percent and 15 percent of students enrolled from Ohio in the public institutions. The 43 counties with populations over 50,000 account for about 90 percent of the state's population, and the same percentage of enrollments in the state-assisted institutions.

TABLE 11

State-Assisted Colleges and Universities
Breakdown of Head Count Enrollments by Home Counties of Ohio Students as of Fall Term, 1965

County	State Universities	University Branches	Municipal Universities	Community Colleges	Total	Jan. 1,1965 Est. County Population	Enrollment Per 1000 Population
Adams	57	22	7		86	19,486	4.4
Allen	647	533	75		1,255	110,512	11.4
Ashland	266	111	19		396	41,218	9.6
Ashtabula	556	772	41	2	1,371	99,205	13.8
Athens	740	3	5		748	47,654	15.7
Auglaize	283	133	22		438	38,434	11.4
Belmont	472	688	39		1,199	80,280	14.9
Brown	80	13	52		145	26,710	5.4
Butler	1,895	888	725		3,508	222,714	15.8
Carroll	137	29	19		185	21,588	8.6
Champaign	202	19	5		226	30,798	7.3
Clark	931	389	85		1,405	139,944	10.0
Clermont	248	93	449		790	100,853	7.8
Clinton	226	45	73		344	32,207	10.7
Columbiana	651	408	54		1,113	109,120	10.2
Coshocton	252	37	18		307	32,788	9.4
Crawford	437	168	19		624	50,854	12.3
Cuyahoga	17,418	2,139	567	8,844	28,968	1,751,402	16.5
Darke	241	132	30		403	47,391	8.5
Defiance	200	40	31		271	34,227	7.9
Delaware	370	32	5		407	38,984	10.4
Erie	638	337	100	86	1,161	75,552	15.4
Fairfield	506	522	16		1,044	69,723	15.0
Fayette	195	23	24		242	25,737	9.4
Franklin	11,300	768	101		12,169	774,338	15.7
Fulton	281	46	97		424	30,812	13.8
Gallia	108	7	3		118	26,598	4.4
Geauga	567	105	17	88	777	58,257	13.3
Greene	919	929	58		1,906	112,292	17.0
Guernsey	243	78	10		331	38,706	8.6
Hamilton	2,712	619	16,171		19,502	932,154	20.9
Hancock	541	85	53	1	680	58,328	11.7
Hardin	221	39	20		280	29,772	9.4
Harrison	108	57	8		173	17,195	10.1
Henry	259	28	26		313	26,838	11.6
Highland	156	44	35		235	30,264	7.8
Hocking	131	75			206	20,513	10.0
Holmes	90	18	5		113	22,985	4.9
Huron	455	130	24	26	635	50,776	12.5
Jackson	144	43	6		193	29,511	6.5

TABLE 11 (Continued)

County	State Universities	University Branches	Municipal Universities	Community Colleges	Total	Jan. 1,1965 Est. County Population	Enrollment Per 1000 Population
Jefferson	728	186	48		962	98,863	9.7
Knox	308	87	21		416	40,040	10.4
Lake	1,723	233	54	292	2,302	185,954	12.4
Lawrence	155	342	16		513	58,046	8.8
Licking	625	523	18	1	1,167	100,169	11.6
Logan	304	42	14		360	36,045	10.0
Lorain	1,896	552	68	1,794	4,310	251,509	17.1
Lucas	1,932	35	8,041		10,008	481,642	20.8
Madison	217	16	3		236	28,477	8.3
Mahoning	1,371	101	108	1	1,581	315,113	5.0
Marion	403	313	24		740	64,810	11.4
Medina	641	247	138	71	1,097	77,547	14.1
Meigs	122	1	1		124	21,536	5.8
Mercer	175	9	15		199	34,099	5.8
Miami	478	411	105		994	78,202	12.7
Monroe	92	27	3		122	15,488	7.9
Montgomery	3,198	3,432	759		7,389	585,763	12.6
Morgan	69	43	2		114	12,599	9.0
Morrow	126	65	11		202	20,470	9.9
Muskingum	404	697	21		1.122	80,720	13.9
Noble	81	11	1		93	10,406	8.9
Ottawa	329	109	118		556	37,632	14.8
Paulding	80	11	3		94	17,544	5.4
Perry	134	122	6		262	27,227	9.6
Pickaway	240	79	2		321	39,639	8.1
Pike	77	105	2		184	21,298	8.6
Portage	1,380	31	128	11	1,550	106,045	14.6
Preble	265	77	27		369	35,021	10.5
Putnam	199	49	6		254	29,744	8.5
Richland	763	642	57	1	1,463	129,969	11.3
Ross	345	518	19		882	64,306	13.7
Sandusky	464	274	75		813	60,723	13.4
Scioto	374	795	42		1,211	83,247	14.5
Seneca	453	194	65	1	713	61,754	11.5
Shelby	234	113	18		365	35,890	10.2
Stark	2,665	1,255	533		4,453	363,692	12.2
Summit	4,385	262	6,754	50	11,451	558,934	20.5
Trumbull	1,358	545	97	1	2,001	230,609	8.7
Tuscarawas	561	328	51		940	78,961	11.9
Union	228	27	3		258	23,749	10.9
Van Wert	190	38	13		241	29,151	8.3
Vinton	50	14	3		67	9,868	6.8
Warren	268	214	203		685	79,850	8.6
Washington	347	7	17		371	55,118	6.7
Wayne	668	235	95		998	83,648	11.9
Williams	234	101	27	1	363	31,659	11.5
Wood	1,047	44	229		1,320	78,952	16.7
Wyandot	174	57	8		239	22,246	10.7
Total	78,443	24,266	37,186	11,271	151,166	10,501,234	14.4

The effect which the geographical location of educational institutions has upon enrollments is further reflected by the number of enrollments from individual counties as related to the population of those counties.

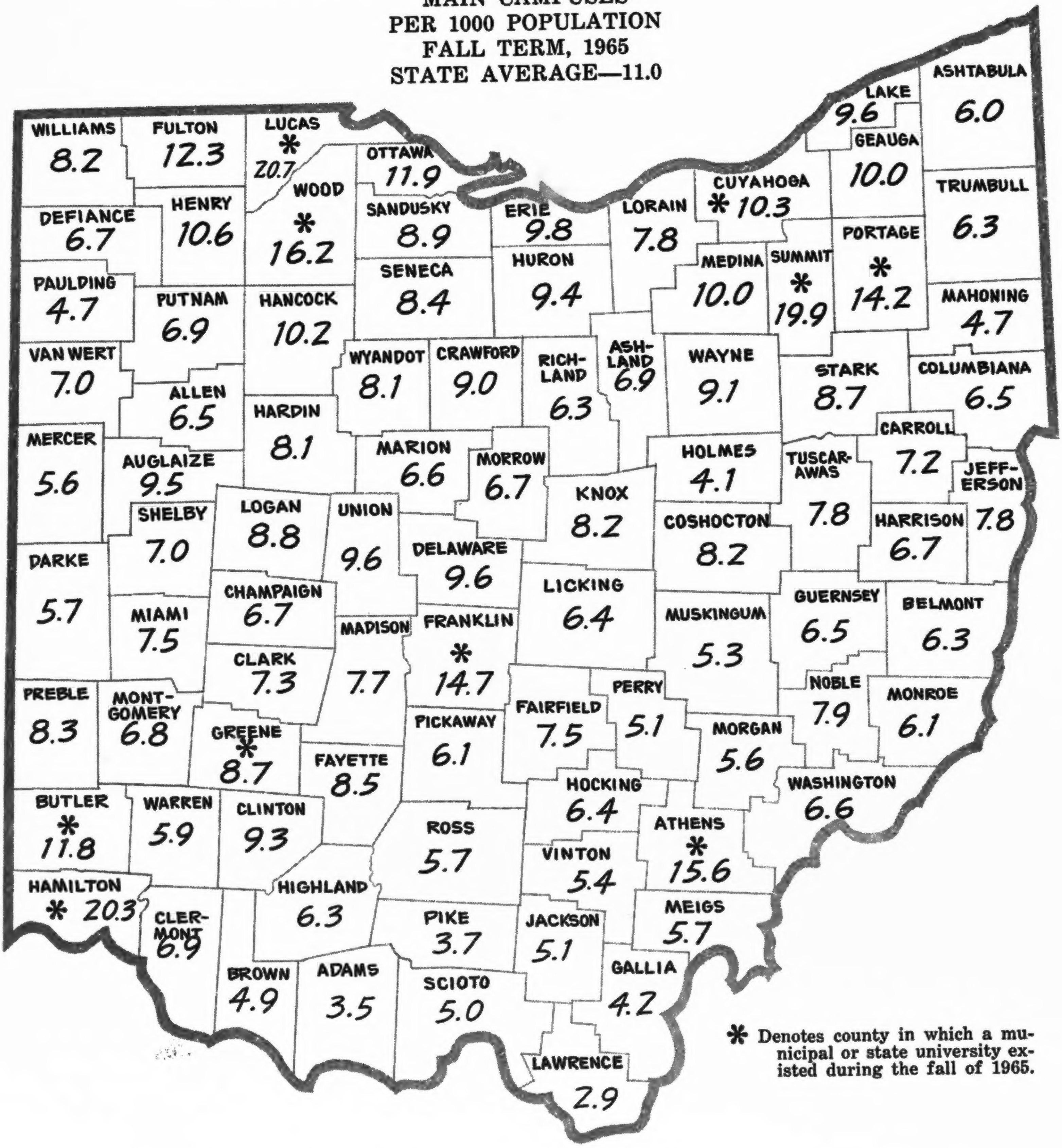
Map 2 shows the number of enrollments on the main campuses of Ohio's public universities per 1,000 residents within each county. While certainly many factors bear upon the number of students enrolling in public institutions from a given county, the importance of institutional location is suggested by the fact that every county sending more students per 1,000 population than the state-wide average of eleven students is either the seat of a public university or is contiguous to the home county of such an institution.

It is vital of course, that new institutional locations be chosen not only with a view to present population and enrollment distributions, but that careful attention be given as well to longer range population and enrollment prospects.

The Ohio Department of Development popula-

MAP 2

ENROLLMENT IN MUNICIPAL AND STATE UNIVERSITIES
MAIN CAMPUSES
PER 1000 POPULATION
FALL TERM, 1965
STATE AVERAGE—11.0


WILLIAMS 8.2
FULTON 12.3
LUCAS * 20.7
OTTAWA 11.9
LAKE 9.6
ASHTABULA 6.0
GEAUGA 10.0
DEFIANCE 6.7
HENRY 10.6
WOOD * 16.2
SANDUSKY 8.9
ERIE 9.8
LORAIN 7.8
CUYAHOGA * 10.3
TRUMBULL 6.3
PORTAGE * 14.2
PAULDING 4.7
PUTNAM 6.9
HANCOCK 10.2
SENECA 8.4
HURON 9.4
MEDINA 10.0
SUMMIT * 19.9
MAHONING 4.7
VAN WERT 7.0
WYANDOT 8.1
CRAWFORD 9.0
RICH-LAND 6.3
ASH-LAND 6.9
WAYNE 9.1
STARK 8.7
COLUMBIANA 6.5
ALLEN 6.5
HARDIN 8.1
CARROLL 7.2
MERCER 5.6
AUGLAIZE 9.5
MARION 6.6
MORROW 6.7
HOLMES 4.1
TUSCAR-AWAS 7.8
JEFF-ERSON 7.8
KNOX 8.2
SHELBY 7.0
LOGAN 8.8
UNION 9.6
COSHOCTON 8.2
HARRISON 6.7
DARKE 5.7
DELAWARE 9.6
LICKING 6.4
GUERNSEY 6.5
BELMONT 6.3
MIAMI 7.5
CHAMPAIGN 6.7
MADISON 7.7
FRANKLIN * 14.7
MUSKINGUM 5.3
CLARK 7.3
PERRY 5.1
NOBLE 7.9
MONROE 6.1
PREBLE 8.3
MONT-GOMERY 6.8
GREENE * 8.7
PICKAWAY 6.1
FAIRFIELD 7.5
MORGAN 5.6
FAYETTE 8.5
HOCKING 6.4
WASHINGTON 6.6
BUTLER * 11.8
WARREN 5.9
CLINTON 9.3
ROSS 5.7
ATHENS * 15.6
VINTON 5.4
HAMILTON * 20.3
CLER-MONT 6.9
HIGHLAND 6.3
PIKE 3.7
JACKSON 5.1
MEIGS 5.7
BROWN 4.9
ADAMS 3.5
SCIOTO 5.0
GALLIA 4.2
LAWRENCE 2.9

***** Denotes county in which a municipal or state university existed during the fall of 1965.

Source: Data compiled by Board of Regents staff from institutional reports.

tion projections, cited earlier in Table 6, plotted the growth of population on a county-by-county basis to the year 1980. The specific facilities expansion recommendations of this plan have been located geographically in the light of these future population patterns, as well as the needs of young people already born. Map 3 plots the 1980 population estimates of the Department of Development in the same manner as was earlier used to show actual population in 1965. Of particular note is the fact that Butler, Lorain, and Trumbull Counties will by 1980 join the eight urban counties cited for 1965 as having over 300,000 population. These eleven counties in 1980 will account for 62.3 percent of the state's population. In 1965 they accounted for 61.5 percent of Ohio's citizens.

It is also notable that in 1980 fourteen counties will range in population from 100,000 to 300,000 with Warren, Medina, Wayne, Jefferson, and Ashtabula Counties having joined this group since the 1965 count. These 14 counties in 1980 will account for 15.6 percent of Ohio's total population, where in 1965 they accounted for 14.6 percent.

It is apparent from these comparisons that the urbanization of Ohio's population will continue and that the expansion of enrollment capacity in populous counties will serve an increasing proportion of the state's citizens as the years pass. Such location of new facilities, of course, has been a major feature of recent legislative action and is the recommendation of this plan.

Geographical Distribution of Institutions

The State of Ohio is generally well served by the geographical distribution of higher educational institutions, although in many instances such as the state university branches very substantial expansion of programs and physical facilities must take place before adequate service can be rendered to individual communities and counties. In the series of maps which follows, the geographical spread of public and private institutions of higher education is shown as of the 1965-66 academic year.

Map 4 shows the location of all public universities and colleges in Ohio, including the branches of the state universities. This map places existing state, municipal, and community colleges and universities against the background of Ohio's population developed earlier by Map 1, and the legend reports total enrollment at each location. Of particular note is the fact that only one of the long established six state-sponsored institutions, The Ohio State University, is located in one of the eight urban counties which account for over one-half of Ohio's population. This generally non-urban orientation of the state universities has been substantially offset by the location of municipal universities in the major cities in Hamilton, Lucas, and Summit Counties. Of great importance in measuring Ohio's ability to handle future enrollment growth are the rudimentary beginnings of large-scale public facilities in Cuyahoga, Stark, and Montgomery Counties.

These counties have in the past been served by privately organized and sponsored institutions of higher education, as are a total of 27 Ohio counties. It is the goal of this plan to concentrate facilities in the populous counties so far as the expansion of undergraduate enrollment capacity is concerned. It is the constant purpose of all state-level planning, however, to expand public facilities in such a way as to minimize the impact of this growth upon the state's privately supported institutions.

Map 5 shows the location of privately controlled institutions against the background of Ohio's population distribution. The map legend lists student enrollment at each institution for the fall term of 1965 as reported by the U. S. Office of Education.

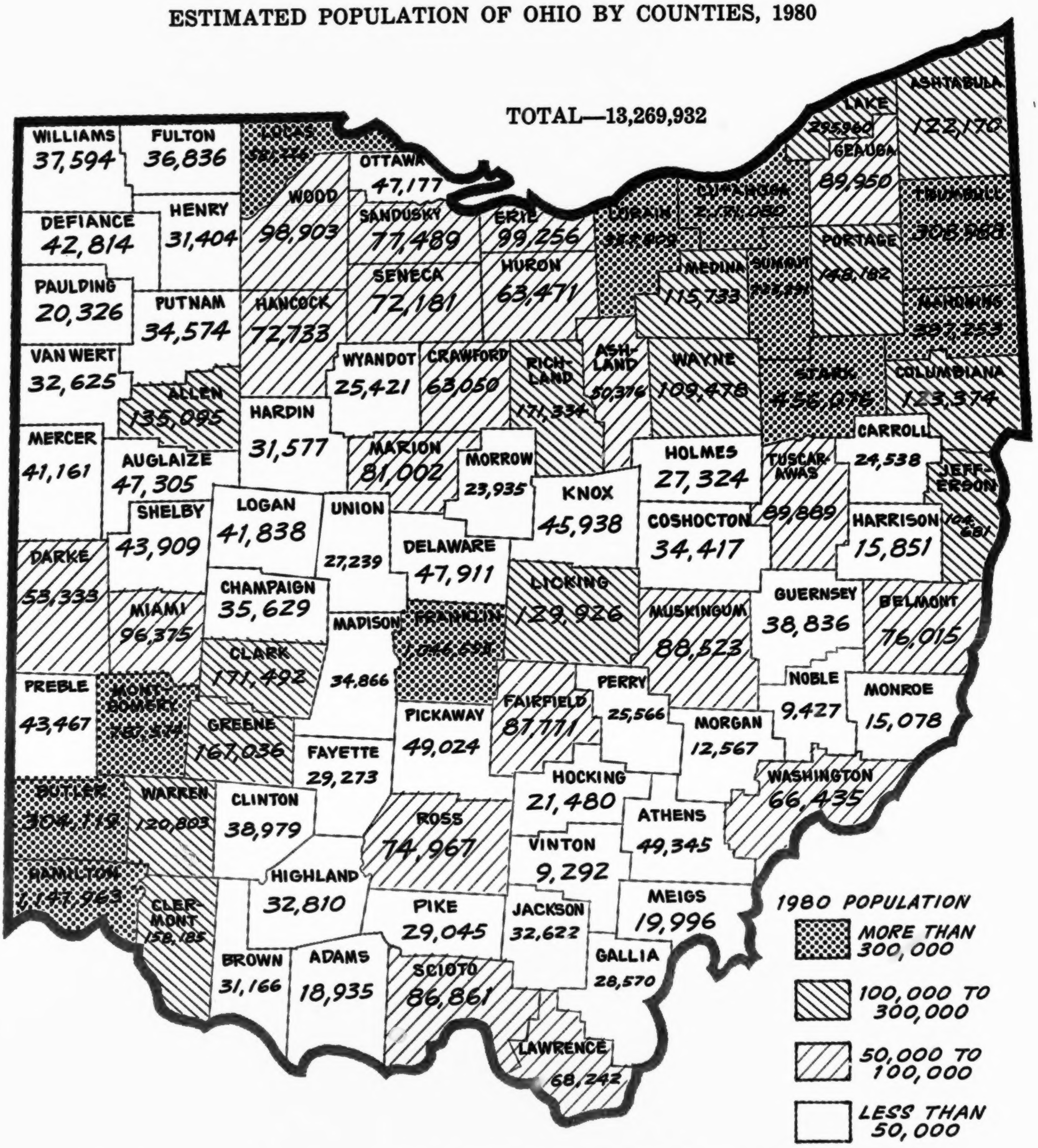
Maps 6 and 7 provide additional information regarding educational institutions in Ohio. Map 6 reports privately controlled junior colleges and privately controlled business schools. Map 7 lists technical schools established by local school districts under auspices of the State Board of Education and the National Defense Education Act. More will be said about these institutions in the chapter dealing with educational programs.

Proposed New or Expanded Public Facilities

In any proposal for an expanded state-wide network of higher educational resources capable of handling enormous enrollment growth, it is important not only that over-all capacities be greatly increased, but that a proper balance between capacities at various levels of study be maintained as well. In 1965, the public colleges and universities — state universities, municipal universities and community colleges — enrolled 168,000 students of the total of 266,000 enrolled

MAP 3

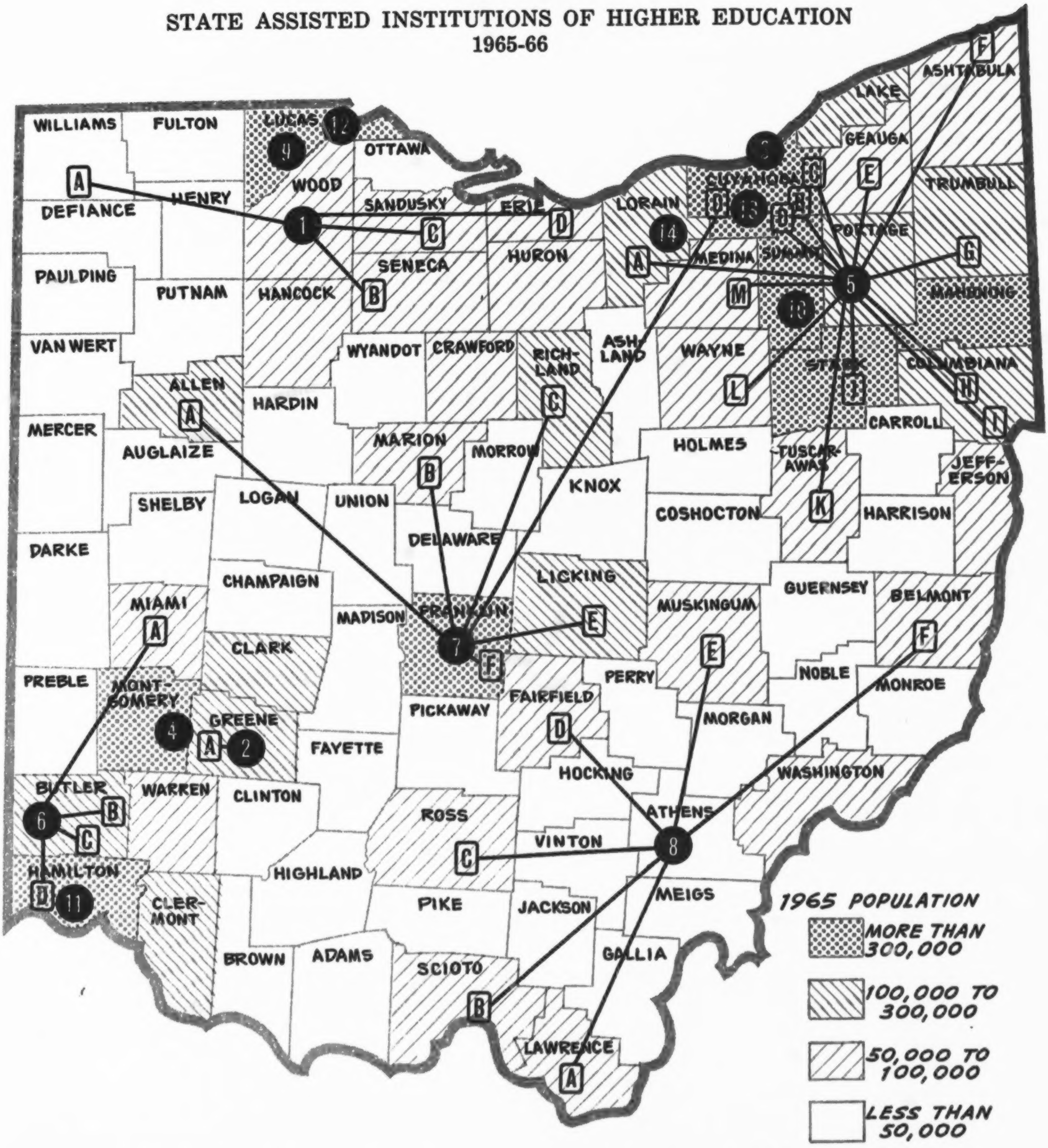
ESTIMATED POPULATION OF OHIO BY COUNTIES, 1980


TOTAL—13,269,932
WILLIAMS 37,594
FULTON 36,836
LUCAS
OTTAWA 47,177
WOOD 98,903
DEFIANCE 42,814
HENRY 31,404
SANDUSKY 77,489
ERIE 99,256
LORAIN
CUYAHOGA
LAKE 295,960
GEAUGA 89,950
ASHTABULA 122,170
TRUMBULL
PAULDING 20,326
PUTNAM 34,574
HANCOCK 72,733
SENECA 72,181
HURON 63,471
MEDINA 115,733
SUMMIT
PORTAGE 148,182
MAHONING
VAN WERT 32,625
ALLEN 135,095
HARDIN 31,577
WYANDOT 25,421
CRAWFORD 63,050
RICHLAND 171,334
ASHLAND 50,376
WAYNE 109,478
STARK 456,076
COLUMBIANA 123,374
MERCER 41,161
AUGLAIZE 47,305
MARION 81,002
MORROW 23,935
KNOX 45,938
HOLMES 27,324
TUSCARAWAS 89,889
CARROLL 24,538
JEFFERSON 104,681
SHELBY 43,909
LOGAN 41,838
UNION 27,239
DELAWARE 47,911
COSHOCTON 34,417
HARRISON 15,851
DARKE 53,333
MIAMI 96,375
CHAMPAIGN 35,629
MADISON 34,866
FRANKLIN
LICKING 129,926
MUSKINGUM 88,523
GUERNSEY 38,836
BELMONT 76,015
CLARK 171,492
PREBLE 43,467
MONTGOMERY
GREENE 167,036
FAYETTE 29,273
PICKAWAY 49,024
FAIRFIELD 87,771
PERRY 25,566
MORGAN 12,567
NOBLE 9,427
MONROE 15,078
BUTLER 304,119
WARREN 120,803
CLINTON 38,979
ROSS 74,967
HOCKING 21,480
ATHENS 49,345
WASHINGTON 66,435
HAMILTON 1,147,963
CLERMONT 158,185
HIGHLAND 32,810
PIKE 29,045
VINTON 9,292
JACKSON 32,622
MEIGS 19,996
BROWN 31,166
ADAMS 18,935
SCIOTO 86,861
GALLIA 28,570
LAWRENCE 68,242
1980 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

Source: Ohio Department of Development, *Total Population, By County, Quinquennially, 1965-1980.*

MAP 4

STATE ASSISTED INSTITUTIONS OF HIGHER EDUCATION
1965-66


WILLIAMS
FULTON
LUCAS
OTTAWA
WOOD
DEFIANCE
HENRY
SANDUSKY
ERIE
LORAIN
CUYAHOGA
LAKE
ASHTABULA
GEAUGA
TRUMBULL
PAULDING
PUTNAM
HANCOCK
SENECA
HURON
MEDINA
SUMMIT
PORTAGE
MAHONING
VAN WERT
ALLEN
WYANDOT
CRAWFORD
RICHLAND
ASHLAND
WAYNE
STARK
COLUMBIANA
HARDIN
CARROLL
MERCER
AUGLAIZE
MARION
MORROW
HOLMES
TUSCARAWAS
JEFFERSON
SHELBY
LOGAN
UNION
KNOX
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1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

Source of enrollment data: U.S. Office of Education, *Opening (Fall) Enrollment in Higher Education, 1965.*

LEGEND, MAP 4

	Fall, 1965 Enrollment*	
	Branch Campus	Main Campus
STATE UNIVERSITIES**		
1. The Bowling Green State University		9,901
Branches:		
A. Bryan	212	
B. Fostoria	306	
C. Fremont	371	
D. Sandusky	503	
2. The Central State University		2,194
Branches:		
A. Xenia	61	
3. The Cleveland State University		6,026
4. Dayton Campus	4,516***	
5. The Kent State University		14,833
Branches:		
A. Elyria	621	
B. Cleveland	574	
C. Euclid	664	
D. Bedford	299	
E. Geauga	153	
F. Ashtabula	840	
G. Warren	638	
H. Salem	202	
I. East Liverpool	265	
J. Canton	1,239	
K. Tuscarawas	350	
L. Orrville	211	
M. Wadsworth	419	
6. The Miami University		9,937
Branches:		
A. Piqua	452	
B. Middletown	821	
C. Hamilton	437	
D. Norwood	654	
7. The Ohio State University		35,949
Branches:		
A. Lima	801	
B. Marion	432	
C. Mansfield	982	
D. Lakewood	633	
E. Newark	537	
F. Columbus	1,140	
8. The Ohio University		14,517
Branches:		
A. Ironton	335	
B. Portsmouth	867	
C. Chillicothe	772	
D. Lancaster	775	
E. Zanesville	885	
F. Belmont County	927	
9. The Toledo St. Coll. of Med. (not yet operative)		
Total State Universities	23,894	93,357
MUNICIPAL UNIVERSITIES		
10. The University of Akron		8,549
11. The University of Cincinnati		24,512
12. The University of Toledo		8,107
Total Municipal Universities		41,168
COMMUNITY COLLEGES		
13. The Cuyahoga Community College		7,287
14. The Lorain Co. Community Coll.		970
Total Community Colleges		8,257

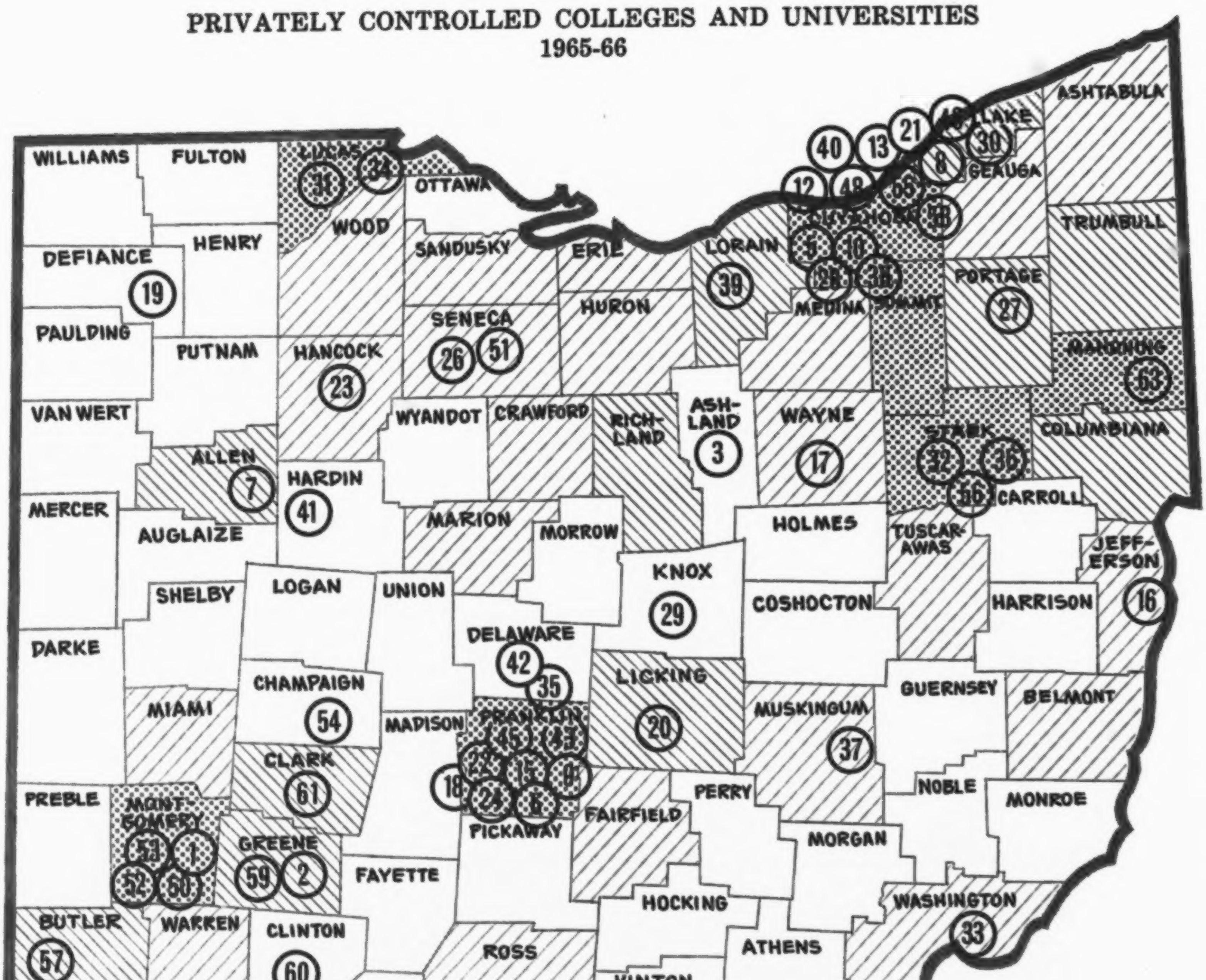
* Excludes students enrolled for programs not chiefly creditable toward a bachelor's degree.

** Main Campus enrollment counts for the state universities include all enrollments reported by the U. S. Office of Education less enrollments at the branches as separately reported to the Ohio Board of Regents.

*** For purposes of this report, enrollment at the Dayton Campus has been added into the total of branch enrollments.

MAP 5

PRIVATELY CONTROLLED COLLEGES AND UNIVERSITIES
1965-66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ERIE
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SUMMIT
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PUTNAM
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SENECA
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HURON
MAHONING
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VAN WERT
WYANDOT
CRAWFORD
RICHLAND
ASHLAND
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WAYNE
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STARK
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36
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CARROLL
COLUMBIANA
ALLEN
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HARDIN
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MERCER
AUGLAIZE
MARION
MORROW
HOLMES
TUSCARAWAS
JEFFERSON
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LOGAN
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JACKSON
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BROWN
ADAMS
SCIOTO
LAWRENCE
1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

Source: U. S. Office of Education, *Opening (Fall) Enrollment in Higher Education, 1965.*

LEGEND, MAP 5

		Fall, 1965 Enrollment
1.	*Air Force Institute of Technology***	500
2.	*Antioch College	1679
3.	*Ashland College	1990
4.	*The Athenaeum of Ohio	566
5.	*Baldwin-Wallace College	2874
6.	Bliss College	774
7.	*Bluffton College	608
8.	*Borromeo Seminary of Ohio	167
9.	*Capital University	1755
10.	*Case Institute of Technology	2613
11.	Cincinnati Bible Seminary	556
12.	Cleveland Institute of Music	184
13.	Cleveland Marshall Law School	647
14.	*College of Mt. St. Joseph on the Ohio	1145
15.	*College of St. Mary of the Springs	948
16.	*The College of Steubenville	1085
17.	*The College of Wooster	1532
18.	Columbus College of Art and Design	311
19.	*The Defiance College	1024
20.	*Denison University	1702
21.	Dyke College	933
22.	Evangelical Lutheran Theological Seminary	236
23.	*Findlay College	1229
24.	Franklin University	1185
25.	*Hebrew Union College — Jewish Institute of Religion	507
26.	*Heidelberg College	1116
27.	*Hiram College	1015
28.	*John Carroll University	4559
29.	*Kenyon College	776
30.	*Lake Erie College	1075
31.	*Lourdes Junior College	111

		Fall, 1965 Enrollment
32.	*Malone College	1115
33.	*Marietta College	2048
34.	*Mary Manse College	1503
35.	Methodist Theological School of Ohio	163
36.	*Mount Union College	1312
37.	*Muskingum College	1524
38.	*Notre Dame College	586
39.	*Oberlin College	2465
40.	Ohio College of Podiatry	209
41.	*Ohio Northern University	2718
42.	*Ohio Wesleyan University	2457
43.	*Otterbein College	1537
44.	*Our Lady of Cincinnati College	1221
45.	Pontifical College Josephinum	137
46.	Rabbinical College of Telshe	214
47.	**Rio Grande College	678
48.	*St. John College of Cleveland	989
49.	Salmon P. Chase College - Law	264
50.	**Sinclair College	1435
51.	Tiffin University	327
52.	United Theological Seminary	169
53.	*University of Dayton	8915
54.	Urbana College	247
55.	*Ursuline College for Women	375
56.	**Walsh College	514
57.	*Western College for Women	563
58.	*Western Reserve University	8525
59.	*Wilberforce University	612
60.	*Wilmington College	901
61.	*Wittenberg University	3098
62.	*Xavier University	5194
63.	*The Youngstown University	11041
	Total Privately Controlled Institutions	97,958

* Members of the North Central Association of Colleges and Secondary Schools, 1965-66.

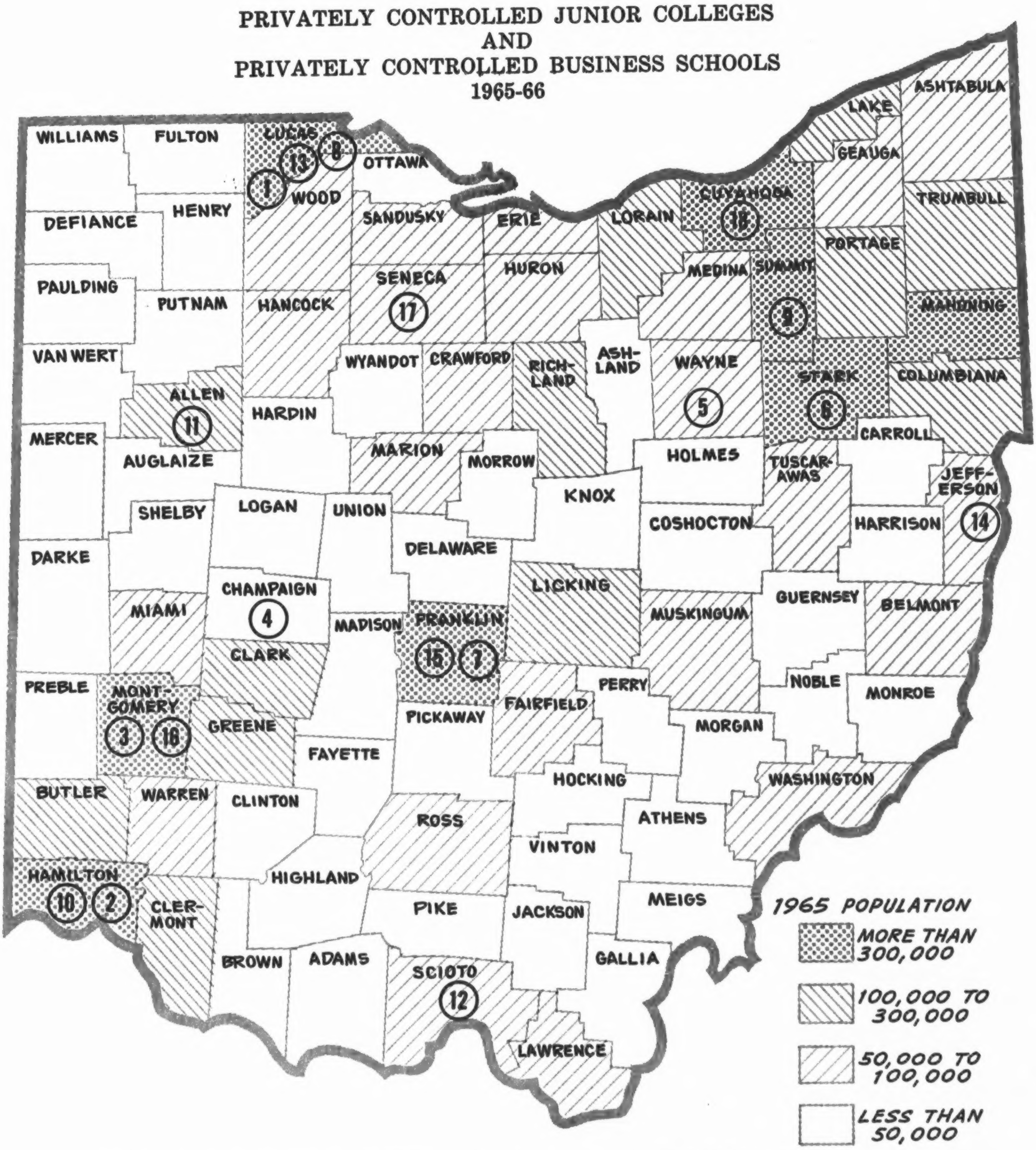
** Candidate for membership in the North Central Association of Colleges and Secondary Schools, 1965-66.

*** Not added in total. Although located in Ohio, this institution is reported separately by the U. S. Office of Education along with other U. S. Service Schools.

MAP 6

PRIVATELY CONTROLLED JUNIOR COLLEGES AND PRIVATELY CONTROLLED BUSINESS SCHOOLS

1965-66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PORTAGE
PAULDING
PUTNAM
HANCOCK
SENECA
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PIKE
JACKSON
MEIGS
BROWN
ADAMS
SCIOTO
12
GALLIA
LAWRENCE
1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

PRIVATELY CONTROLLED JUNIOR COLLEGES, listed in American Junior Colleges, 6th Edition, American Council on Education:

1. Lourdes Junior College
2. Ohio College of Applied Science
3. Sinclair College
4. Urbana College

PRIVATELY CONTROLLED BUSINESS SCHOOLS listed by the Accrediting Commisson for Business Schools, 1965-66:

One-year schools of business:

5. Ohio Institute of Business

Two-year schools of business:

6. Canton College, Incorporated
7. Columbus Business University
8. Davis Business College
9. Hammel-Actual College
10. Miller-Draughon College
11. Northwestern School of Commerce
12. Portsmouth Interstate Business College
13. Stautzenberger Business College
14. Steubenvlle Business College

Junior Colleges of Busness:

15. Bliss College
16. Miami-Jacobs Junior College of Business
17. Tiffin University

— Sinclair College (see 3, above)

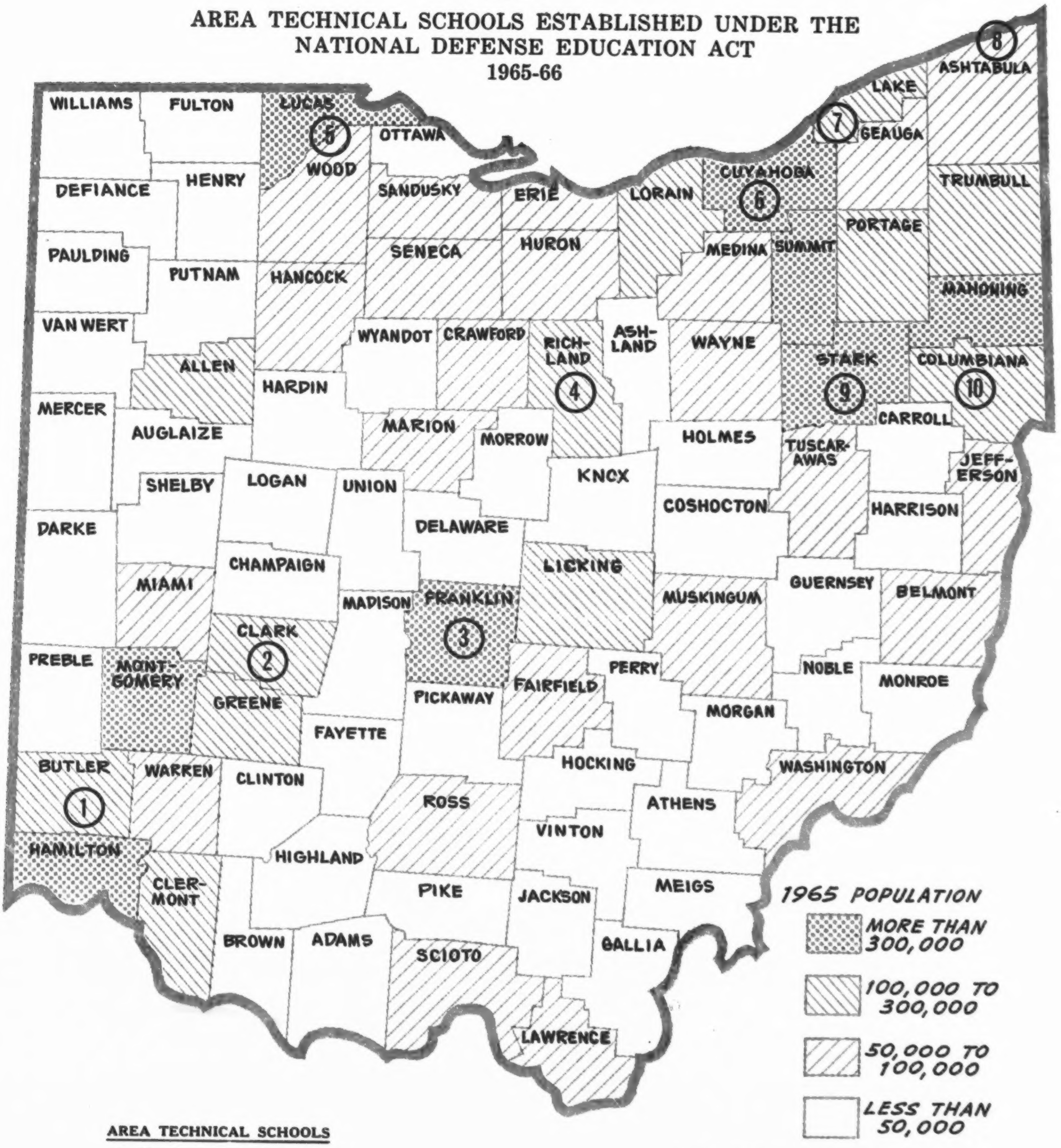
Senior Colleges of Business:

18. Dyke College

MAP 7

AREA TECHNICAL SCHOOLS ESTABLISHED UNDER THE NATIONAL DEFENSE EDUCATION ACT

1965-66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MEDINA
SUMMIT
PORTAGE
MAHONING
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CLER-MONT
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MEIGS
BROWN
ADAMS
SCIOTO
GALLIA
LAWRENCE
1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

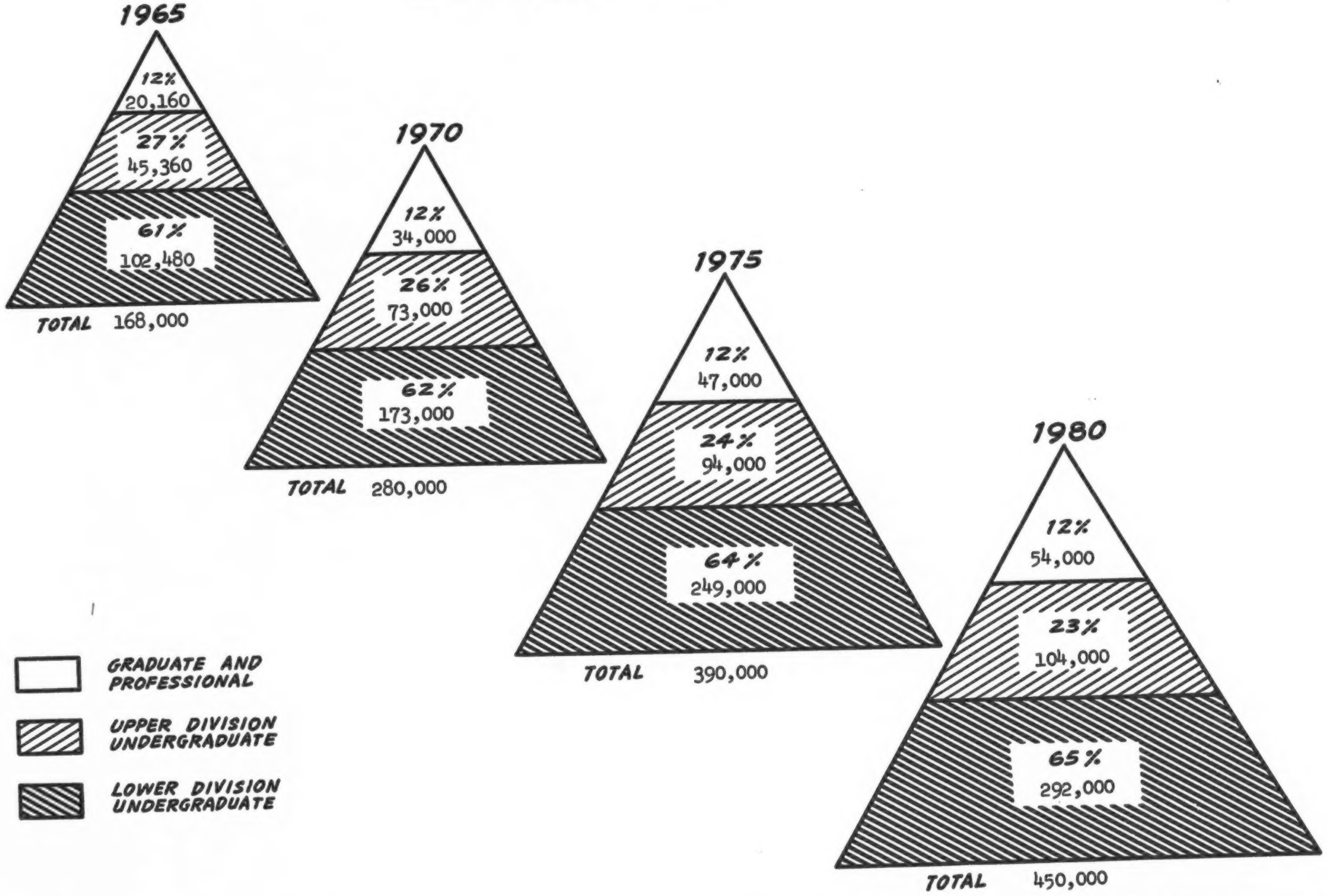
AREA TECHNICAL SCHOOLS

1. Hamilton Technical School
2. Springfield & Clark Co. Technical Education Program
3. Columbus Area Technician School
4. Mansfield School of Technology
5. Penta Technical College
6. Cleveland Technician School
7. Chandler Technical School
8. Ashtabula Technical School
9. Canton Area Technical School
10. The Salem School of Technology

in all Ohio institutions of higher education. If the private colleges and universities collectively can increase their enrollments by 1980 to 200,000 as is anticipated by this plan, the over-all public institutional capacity must increase to 450,000 student spaces during the same period. Chart 2 illustrates the relationships between various levels of enrollment at public institutions in 1965, and estimates the number of student spaces needed in 1970, 1975, and 1980. As is evident from Chart 2, these estimates anticipate an increased proportion of total enrollments in the lower division, resulting from new emphasis upon two-year curricula and the increased ease with which students will be able to attend two years of college while living at home.

CHART 2

ACTUAL 1965 ENROLLMENT BY LEVEL IN STATE ASSISTED COLLEGES AND UNIVERSITIES, AND PROJECTED NEEDS TO 1980



It is the proposal of this plan that the upper two elements of enrollment need within each pyramid depicted in Chart 2, those illustrating upper division undergraduate enrollments and graduate and professional enrollments, be served by the central campuses of state universities, including new universities at Cleveland and at Dayton (and Youngstown University if that institution becomes a state university); by the three municipal universities at Akron, Cincinnati, and Toledo (both the University of Akron and the University of Toledo are scheduled to become state universities in 1967); and by the new Toledo State College of Medicine. It is further proposed that to accomplish this task the municipal universities should prepare to double their enrollment capacities at the upper division undergraduate level between 1965 and 1980, and to handle throughout the fifteen year period about 30 percent of all graduate and professional enrollments shown in Chart 2. It is proposed that the state universities collectively increase upper division capacity from 30,000 in 1965, to 54,000 in 1970, to 70,000 in 1975, and to 78,000 in 1980.

This increase should be accomplished through the vigorous growth of the new universities at Cleveland and at Dayton, and by the shift of emphasis to upper levels of instruction discussed earlier for the established state universities at their central campuses. At the graduate and professional level, it is proposed that the state universities, including the new universities at Cleveland and Dayton, collectively increase their 1965 capacity of 13,000 students, to 23,000 in 1970, to 32,000 in 1975, and to 37,000 in 1980.

Over the past several years, the state university branches have enrolled limited numbers of upper division and graduate students whenever some special community need could be served by so doing. These enrollments in 1965 totaled about 4,000 students at all branches combined. It is proposed that such selected offerings be continued, although the primary assignment of the branches should be to give service on a commuting basis to lower division students.

These several proposals would combine as shown below to meet projected needs at the upper division undergraduate level and at the graduate and professional levels.

TABLE 12

Projected Needs and Proposed Capacities
Upper Levels of Enrollment
State-Assisted Institutions of Higher Education
1965-1980

	1965	1970	1975	1980
Upper Division Undergraduate				
Projected Needs	45,000	73,000	94,000	104,000
Projected Capacities:				
State Universities	31,000	54,000	70,000	78,000
Municipal Universities*	10,500	15,000	19,000	20,000
Branches	3,500	4,000	5,000	6,000
	45,000	73,000	94,000	104,000
Graduate and Professional				
Projected Needs	20,000	34,000	47,000	54,000
Projected Capacities:				
State Universities	13,000	23,000	32,000	37,000
Municipal Universities*	6,250	10,000	14,000	16,000
Branches	750	1,000	1,000	1,000
	20,000	34,000	47,000	54,000

* Includes the University of Akron and the University of Toledo which are scheduled to become state universities in 1967.

Regarding the enormous increases in capacity required at the lower division level, it is proposed that with the exception of limited central campus capacity of the state universities, primary reliance be placed upon commuter facilities located according to existing population concentrations. During 1965 the state universities, including the new university at Cleveland and the Dayton campus, enrolled a total of 52,000 lower division students on their central campuses. It is estimated that this capacity will increase to about 75,000 by 1970. As the longer established institutions shift their emphasis to upper levels of enrollment, the aggregate lower division capacity of all central campuses should subsequently decline to 70,000 in 1975 and to 62,000 in 1980, despite the rapid continuing growth at Cleveland and Dayton. These central campus expectations will reduce total lower division needs which must be met in some other manner as is shown below.

TABLE 13

Total Lower Division Needs
and
Projected Central Campus Capacities of all
State Universities

	1965	1970	1975	1980
Total Needs	103,000	173,000	249,000	292,000
Central Campus Capacities	52,000	75,000	70,000	62,000
Remainder	51,000	98,000	179,000	230,000

The 51,000 student enrollments shown in Table 13 as the "Remainder" for 1965, were shared in that year by the three municipal universities, the community colleges at Cleveland and at Lorain, and the state university branches. Most of these enrollments in 1965 were handled on a commuting basis, and it is proposed to increase that commuter capacity to 230,000 by 1980. In order to do that, a network of two-year facilities is being developed and should be greatly expanded during the years ahead. The specific development projects now underway or proposed to be undertaken immediately are estimated to be adequate for lower division enrollment growth up to the year 1970. Substantial additional expansion will be needed to accommodate such growth after 1970. However, it is proposed that the *system* of two-year centers outlined in this Master Plan will be adequate when fully developed to accommodate the lower division expansion foreseen through 1980. The state's energies should now be directed to the development and expansion of the centers enumerated below rather than to the establishment of additional commitments.

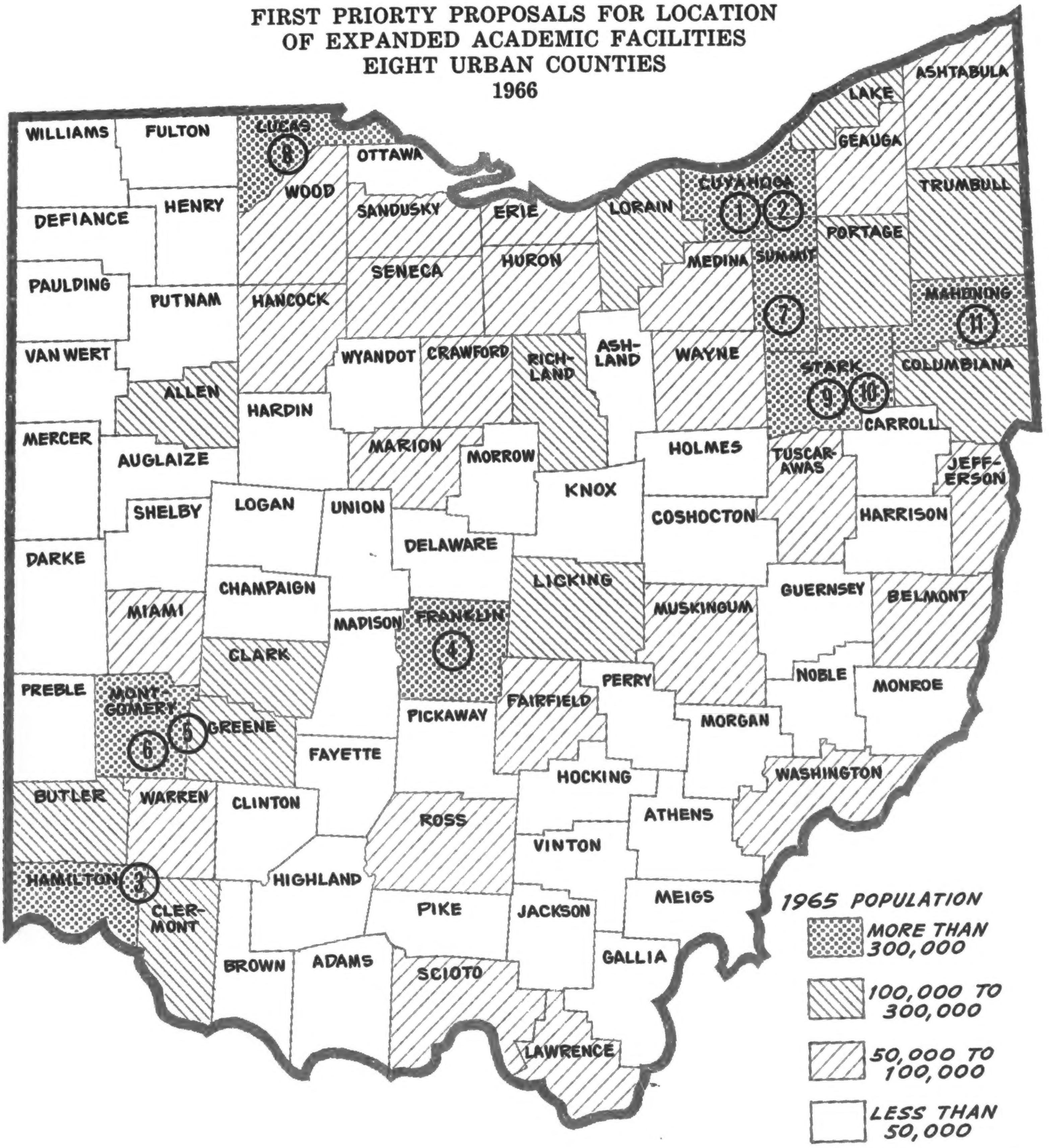
Because of the urgency of relating lower division expansion to population concentrations, it is proposed that first priority should be given to developments in the eight urban counties of Ohio. Map 8 shows the location of these first priority proposals as related to 1965 population concentrations.

It is proposed that second priority in the development of lower division commuting capacity should be given to those counties having a 1965 population of 100,000 or more. Map 9 shows the location of these second priority proposals as related to 1965 population concentrations. It should be noted that Jefferson and Ashtabula Counties, both of which in 1965 had populations of slightly less than 100,000, have nevertheless been included in this group of proposals.

It is also proposed that additional attention should be given to meeting the needs of several areas of the state where individual county populations fall under 100,000, but where groups of contiguous counties represent significant population concentrations. Map 10 shows the location of these additional proposals as related to 1965 population concentrations.

MAP 8

FIRST PRIORTY PROPOSALS FOR LOCATION OF EXPANDED ACADEMIC FACILITIES EIGHT URBAN COUNTIES 1966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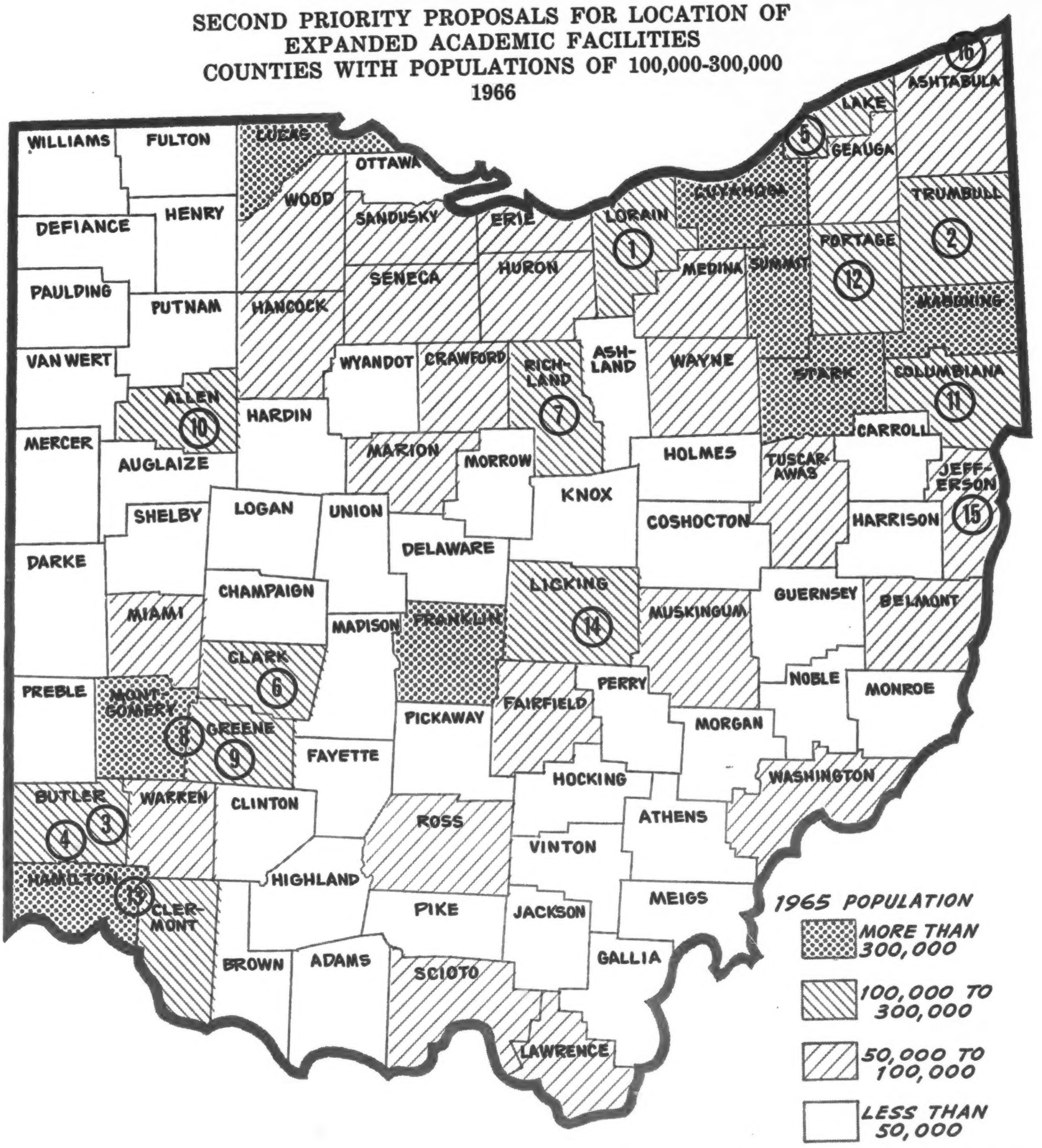
MEIGS
PIKE
JACKSON
CLERMONT
GALLIA
BROWN
ADAMS
SCIOTO
LAWRENCE
1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

1. Development of Cleveland State University
2. Development of Cuyahoga Community College
3. Development of Two-Year Campus by University of Cincinnati
4. Development of General College by the Ohio State University
5. Development of Wright State University
6. Development of the Sinclair Community College
7. Development of the General and Technical College of the University of Akron
8. Development of the General and Technical College of the University of Toledo
9. Devolpment of Kent State University—Canton
10. Development of Stark County Technical Institute
11. Development of Youngstown University and the Mahoning County Community College.

MAP 9

SECOND PRIORITY PROPOSALS FOR LOCATION OF EXPANDED ACADEMIC FACILITIES COUNTIES WITH POPULATIONS OF 100,000-300,000

1966



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ASHTABULA
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WILLIAMS
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LUCAS
OTTAWA
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CUYAHOGA
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DEFIANCE
HENRY
SANDUSKY
ERIE
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SUMMIT
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PUTNAM
HANCOCK
SENECA
HURON
MAHONING
VAN WERT
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CRAWFORD
RICH-LAND
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BROWN
ADAMS
SCIOTO
GALLIA
LAWRENCE
1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

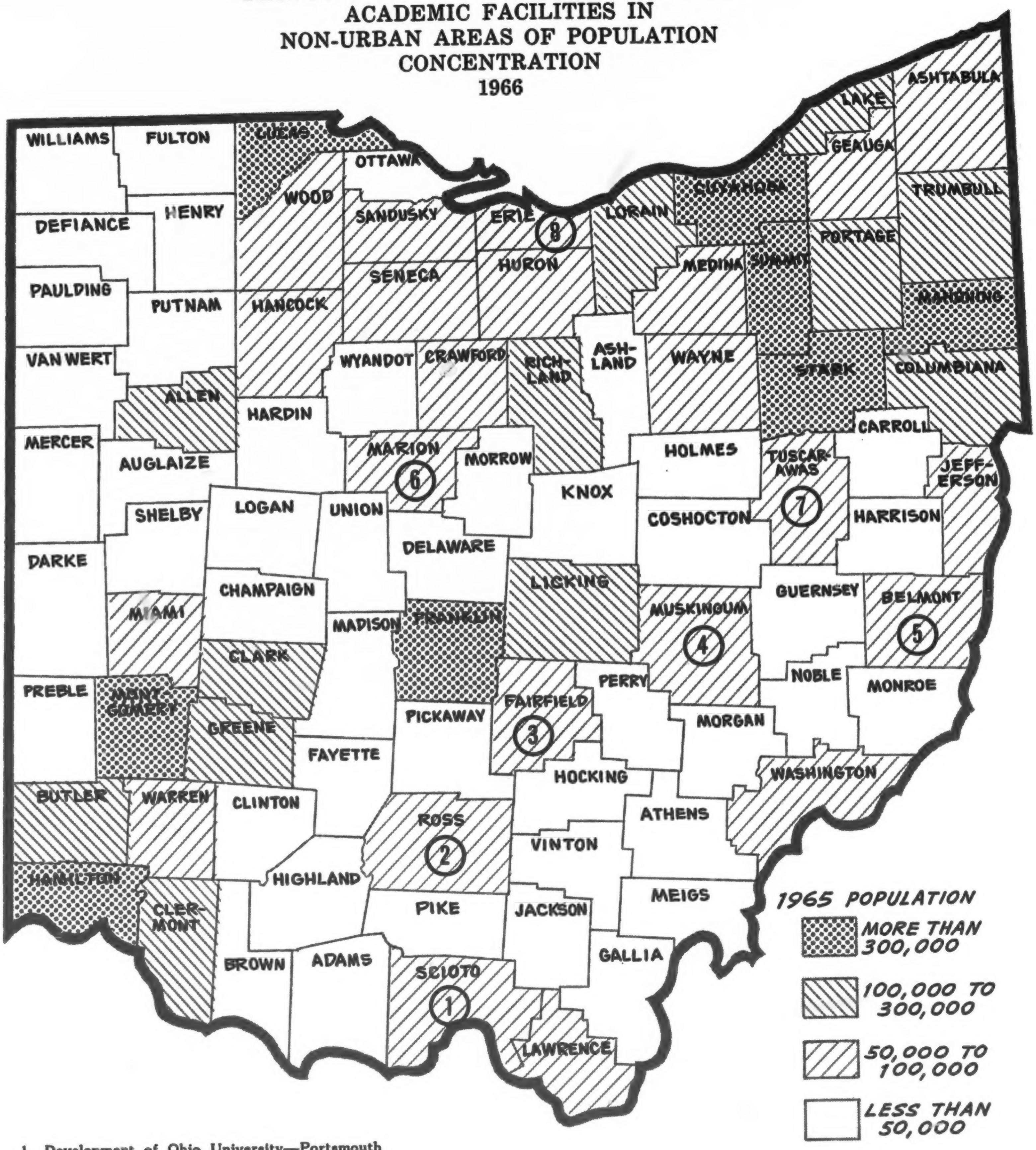
1. Development of Lorain County Community College
2. Development of Kent State University—Warren
3. Development of Miami University—Middletown
4. Development of Miami University—Hamilton
5. Development of a Lake County community college or a state university branch
6. Development of the Clark County Technical Institute
7. Development of the Ohio State University—Mansfield
8. Development of the Wright State University
9. Continued development of Central State University
10. Development of the Ohio State University—Lima
11. Development of facilities in adjacent areas to serve Columbiana County.
12. Continued development of Kent State University
13. Development of the Blue Ash branch of the University of Cincinnati
14. Development of the Ohio State University—Newark
15. Development of a technical institute in Jefferson County
16. Development of Kent State University—Ashtabula

Note: Ashtabula and Jefferson Counties had populations in 1965 only slightly below 100,000 persons, and have therefor been included in this group of proposals

MAP 10

PROPOSALS FOR LOCATION OF EXPANDED ACADEMIC FACILITIES IN NON-URBAN AREAS OF POPULATION CONCENTRATION

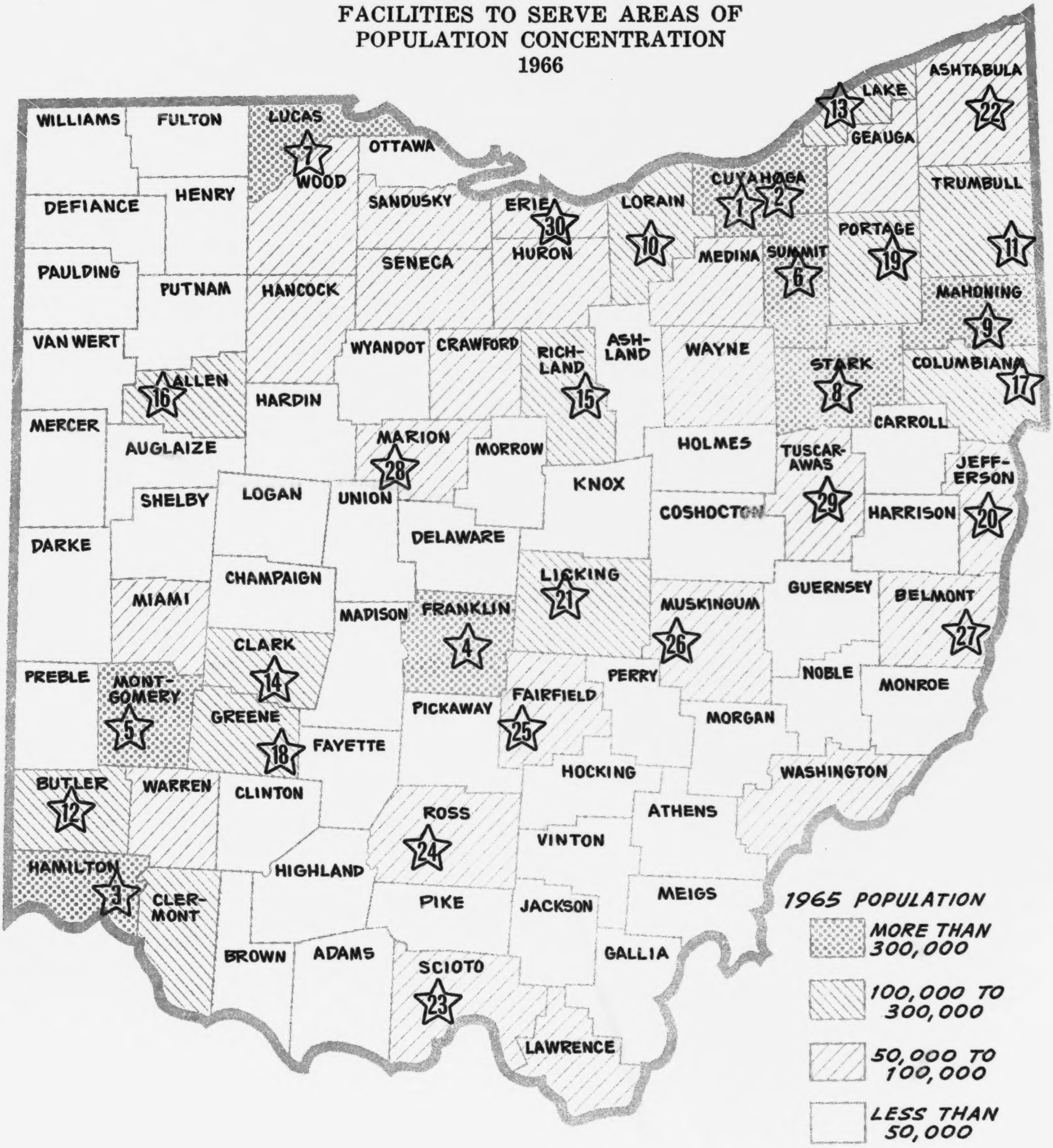
1966


WILLIAMS
FULTON
LUCAS
OTTAWA
LAKE
ASHTABULA
GEAUGA
CUYAHOGA
TRUMBULL
DEFIANCE
HENRY
WOOD
SANDUSKY
ERIE
8
LORAIN
PORTAGE
PAULDING
PUTNAM
HANCOCK
SENECA
HURON
MEDINA
SUMMIT
MAHONING
VAN WERT
WYANDOT
CRAWFORD
RICH-LAND
ASH-LAND
WAYNE
STARK
COLUMBIANA
ALLEN
HARDIN
CARROLL
MERCER
AUGLAIZE
MARION
6
MORROW
HOLMES
TUSCAR-AWAS
7
JEFF-ERSON
SHELBY
LOGAN
UNION
KNOX
COSHOCTON
HARRISON
DELAWARE
DARKE
CHAMPAIGN
LICKING
GUERNSEY
BELMONT
5
MIAMI
MADISON
FRANKLIN
MUSKINGUM
4
CLARK
PREBLE
MONT-GOMERY
FAIRFIELD
3
PERRY
NOBLE
MONROE
GREENE
PICKAWAY
MORGAN
FAYETTE
HOCKING
WASHINGTON
BUTLER
WARREN
CLINTON
ROSS
2
ATHENS
VINTON
HAMILTON
HIGHLAND
CLER-MONT
PIKE
JACKSON
MEIGS
BROWN
ADAMS
SCIOTO
1
GALLIA
LAWRENCE
1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

1. Development of Ohio University—Portsmouth
2. Development of Ohio University—Chillicothe
3. Development of Ohio University—Lancaster
4. Development of Ohio University—Zanesville
5. Development of Ohio University—Belmont County
6. Development of the Ohio State University—Marion
7. Development of Kent State University—New Philadelphia
8. Development of Bowling Green State University—Sandusky

MAP 11

PROPOSED STATE-WIDE SYSTEM OF EXPANDED ACADEMIC FACILITIES TO SERVE AREAS OF POPULATION CONCENTRATION 1966


WILLIAMS
FULTON
LUCAS
7
WOOD
OTTAWA
LAKE
13
GEAUGA
ASHTABULA
22
DEFIANCE
HENRY
SANDUSKY
ERIE
30
HURON
LORAIN
10
CUYAHOGA
1
2
TRUMBULL
11
PAULDING
PUTNAM
HANCOCK
SENECA
MEDINA
SUMMIT
6
PORTAGE
19
MAHONING
9
VAN WERT
WYANDOT
CRAWFORD
RICH-LAND
15
ASH-LAND
WAYNE
STARK
8
COLUMBIANA
17
ALLEN
16
HARDIN
MERCER
AUGLAIZE
MARION
28
MORROW
HOLMES
TUSCAR-AWAS
29
CARROLL
JEFF-ERSON
20
SHELBY
LOGAN
UNION
KNOX
COSHOCTON
HARRISON
DARKE
DELAWARE
CHAMPAIGN
LICKING
21
GUERNSEY
BELMONT
27
MIAMI
MADISON
FRANKLIN
4
MUSKINGUM
26
CLARK
14
PREBLE
MONT-GOMERY
5
PERRY
NOBLE
MONROE
GREENE
18
FAYETTE
PICKAWAY
FAIRFIELD
25
MORGAN
HOCKING
WASHINGTON
BUTLER
12
WARREN
CLINTON
ROSS
24
ATHENS
VINTON
HAMILTON
3
CLER-MONT
HIGHLAND
PIKE
JACKSON
MEIGS
BROWN
ADAMS
SCIOTO
23
GALLIA
LAWRENCE
1965 POPULATION
MORE THAN 300,000
100,000 TO 300,000
50,000 TO 100,000
LESS THAN 50,000

LEGEND, MAP 11

MAJOR URBAN DEVELOPMENT

1. Development of the new Cleveland State University
2. Development of permanent campus for The Cuyahoga Community College.
3. Development of Two-year commuter branch by The University of Cincinnati.
4. Development of Two-year General College of The Ohio State University
5. Development of the New Wright State University and Sinclair Community College.
6. Development of Two-year General and Technical College of The University of Akron.
7. Development of Two-year General and Technical College of The University of Toledo.
8. Development of permanent Campus for The Kent State University-Canton and The Stark County Technical Institute.
9. Development of the Mahoning County Community College and establishment of Youngstown University as a state university.

DEVELOPMENTS IN COUNTIES WITH 100,000-300,000 POPULATION

10. Development of Permanent Campus for the Lorain County Community College.
11. Development of Permanent Campus for The Kent State University-Warren.
12. Development of Permanent Campuses for The Miami University-Middletown and The Miami University-Hamilton.
13. Possible development of a community college or a state university branch.
14. Development of Permanent Campus for The Clark County Technical Institute.
15. Development of Permanent Campus for The Ohio State University-Mansfield.
16. Development of Permanent Campus for The Ohio State University-Lima.
17. Adjacent developments to be supplemented if needed.
18. Continued developmnt of Th Central State University and The Wright State University to serve Greene County
19. Continued development of The Kent State University to serve Portage County
20. Development of a technical institute in Jefferson County.
21. Development of Permanent Campus for The Ohio State University-Newark.
22. Development of Permanent Campus for The Kent State University-Ashtabula

3. Development of Blue Ash branch of The University of Cincinnati to serve Clermont County.

DEVELOPMENT TO MEET NEEDS OF CONTIGUOUS COUNTIES WITH COMBINED POPULATIONS TOTALING MORE THAN 100,000

23. Development of Permanent Campus for The Ohio University-Portsmouth.
24. Development of Permanent Campus for The Ohio University-Chillicothe.
25. Development of Permanent Campus for The Ohio University-Lancaster.
26. Development of Permanent Campus for The Ohio University-Zanesville.
27. Development of Permanent Campus for The Ohio University-Belmont County.
28. Development of Permanent Campus for The Ohio State University-Marion.
29. Development of Permanent Campus for The Kent State University-New Philadelphia.
30. Development of Permanent Campus for The Bowling Green State University-Sandusky.

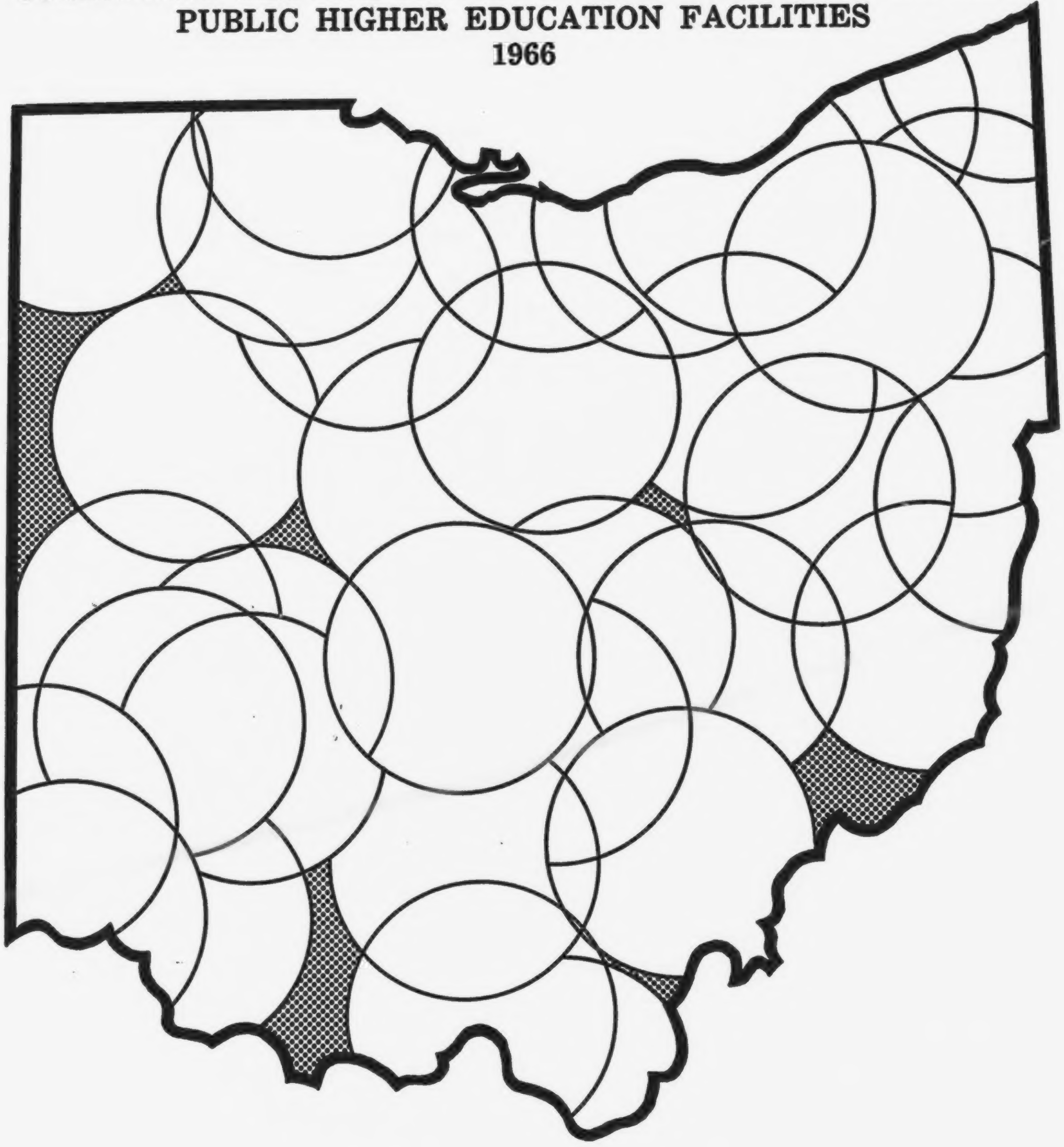
For purposes of convenient reference to the centers of enrollment expansion proposed by this plan to be sufficient for the fifteen year period 1965-1980, Map 11 is presented. This map combines the proposals outlined in Maps 8, 9, and 10.

When projects now underway or proposed for immediate development have been completed, 98 percent of Ohio's young people will have an opportunity for at least two years of higher education at a location within commuting distance of their homes. Map 12 shows the extent to which these proposals will bring educational opportunity within reach of virtually all potential students.

MAP 12

COMMUTING SERVICE AREAS OF EXISTING AND PROPOSED PUBLIC HIGHER EDUCATION FACILITIES

1966



CHAPTER 3

UNDERGRADUATE PROGRAMS

Section 3333.03 of the Ohio Revised Code specifies that the Ohio Board of Regents shall:

> "(E) Recommend the nature of the programs, undergraduate, graduate, professional, state financed research, and public services which should be offered by state colleges, universities, and other state assisted institutions of higher education in order to utilize to best advantage their facilities and personnel;
>
> (F) Recommend to the state colleges, universities, and other state assisted institutions of higher education programs which could be eliminated because they constitute unnecessary duplication, or for other good and sufficient cause; . . .
>
> (N) Approve or disapprove all new degrees and new degree programs at all state colleges, universities, and other state assisted institutions of higher education; . . .

It is evident from this assignment of authority that the Ohio Board of Regents is expected to concern itself in a general way with the nature of the instructional, research, and public service programs provided by the state-assisted institutions of higher education in Ohio. This interest extends but is not necessarily restricted to such matters as the need for various instructional programs, the scope of such programs, the institutions in which various programs should be offered, and the desirable quality of these programs.

At the beginning of its activity in September, 1963, the Board of Regents recognized that it required professional assistance in reviewing the various undergraduate, graduate, professional, research, and public service programs offered by the state-assisted institutions of higher education in Ohio. The Academy for Educational Development was retained to provide factual information and evaluative judgments about the programs of these institutions. The Academy arranged for consultants to visit the state and to prepare the desired reports. Such visits were concluded as of June 30, 1964, and the individual reports were submitted to the Board in December, 1964.

It has not been possible for the staff of the Board to verify the findings of these reports. Moreover, the contents of these reports did not provide a complete coverage of all programs; nor did they provide a uniform depth of factual information about individual programs. Under the circumstances, it has been possible only to summarize the available information and to recognize that this is not necessarily the most recent information.

In some instances the Board has retained special consultants to make further analysis of particular programs, especially at the graduate level. These have been referred to at appropriate places in the discussion. In addition, the staff has collected some supplementary information or has added some discussion material where these were readily available. There is, of course, a tendency to give greater attention to known problem areas than to programs which appear generally to be satisfactory.

At the outset of this discussion it is useful to point out that for reasons of convenience and in accordance with prevailing academic practice, instructional programs have been classified as two-year, baccalaureate, graduate (or special) professional, master's level, and doctoral level. Within this framework, the discussion seeks to call attention to particular subject matter areas of higher education study.

Statistics on Programs

The best available quantitative data on instructional programs are the periodic figures published by the federal government Office of Education on degrees granted by field of study and level of study from each institution. Ohio data for the academic year 1963-64 have been made available to the Board of Regents staff by the U. S. Office of Education for use in advance of scheduled publication of national data. Degrees awarded during 1963-64 are shown in Table 14.

In the academic year 1964 Ohio colleges and universities with accredited status issued 23,347 baccalaureates in the disciplines and professions. There were 4,031 degrees awarded at the Master's level, 2,012 degrees awarded in graduate professional education, and 592 degrees awarded at the Doctor's level. Thus, of the total of 29,982 degrees, 23,347 or 78 percent were degrees for four years of undergraduate study.

In the field of agriculture, The Ohio State University is the only institution in Ohio. The

TABLE 14

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

INSTITUTION	FIELD OF STUDY															
	Agriculture				Architecture				Biological Sciences				Business & Commerce			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.									69	—	10	—	230	—	1	—
The Kent State University					—	21	—	—	69	—	6	—	159	—	37	—
The Miami University					—	13	—	—	101	—	11	—	259	—	31	—
The Ohio State University	145	—	25	18	—	33	—	—	228	—	59	34	403	—	54	12
The Ohio University	7	—	—	—	6	—	—	—	117	—	5	—	239	—	11	—
The Central State College									15	—	—	—	38	—	—	—
The University of Akron									26	—	—	—	117	—	17	—
The University of Cincinnati					—	54	—	—	69	—	10	6	350	—	63	—
The University of Toledo									28	—	2	—	140	—	41	—
Antioch College									24	—	—	—	6	—	—	—
Ashland College									8	—	—	—	22	—	—	—
Athenaeum of Ohio																
Baldwin-Wallace College									16	—	—	—	60	—	—	—
Borromeo Seminary of Ohio																
Bluffton College									4	—	—	—	21	—	—	—
Capital University									19	—	—	—				
Case Inst. of Technology													35	—	40	6
Cincinnati Bible Seminary																
Cleveland Inst. of Music																
Cleveland Marshall Law School																
College of Mt. St. Joseph													2	—	—	—
College of St. Mary of Springs									5	—	—	—				
College of Steubenville									3	—	—	—	22	—	—	—
College of Wooster									17	—	—	—				
Defiance College									4	—	—	—	11	—	—	—
Denison University									33	—	—	—				
Dyke College													56	—	—	—
Evang. Lutheran Theol. Seminary																
Fenn College									2	—	—	—	83	—	—	—
Findlay College									3	—	—	—	18	—	—	—
Franklin University													21	—	—	—
Hebrew Un. Coll. Jewish Inst.																
Heidelberg College									14	—	—	—	12	—	—	—
Hiram College									11	—	—	—				
John Carroll University									33	—	3	—	89	—	—	—
Kenyon College									14	—	—	—				
Lake Erie College									3	—	—	—				
Malone College									2	—	—	—	2	—	—	—
Marietta College									34	—	—	—	44	—	—	—
Mary Manse College									6	—	—	—				
Mount Union College									19	—	—	—				
Muskingum College									8	—	—	—				
Notre Dame College									7	—	—	—	2	—	—	—
Oberlin College									41	—	3	—				
Ohio College of Podiatry																
Ohio Northern University									13	—	—	—				
Ohio Wesleyan University									41	—	—	—				
Otterbein College									19	—	—	—	12	—	—	—
Our Lady of Cincinnati College									11	—	—	—				
Pontif. College Josephinium																
Rio Grande College									3	—	—	—				
St. John College of Cleveland																
Salmon P. Chase College-Law																
Tiffin University													24	—	—	—
United Theological Seminary																
University of Dayton									57	—	—	—	139	—	2	—
Ursuline College									9	—	—	—	1	—	—	—
Walsh College									9	—	—	—	11	—	—	—
Western College for Women									3	—	—	—				
Western Reserve University					—	9	—	—	34	—	11	8	51	63	—	—
Wilberforce University									9	—	—	—	4	—	—	—
Wilmington College	2	—	—	—					9	—	—	—	13	—	—	—
Wittenberg College									12	—	—	—	37	—	—	—
Xavier University									26	—	1	—	142	—	127	—
Youngstown University									32	—	—	—	211	—	—	—
	154	—	25	18	6	130	—	—	1339	—	121	48	3086	63	424	18

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

INSTITUTION	FIELD OF STUDY															
	EDUCATION															
	Specialized Teaching Fields				General Teaching Fields				Non-Teaching Fields				Total			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.	273	—	56	—	402	—	12	—	—	—	48	—	675	—	116	—
The Kent State University	257	—	111	—	537	—	84	—	—	—	139	2	794	—	334	2
The Miami University	96	—	46	—	327	—	20	—	—	—	111	—	423	—	177	—
The Ohio State University	287	—	37	17	409	—	—	—	—	—	178	42	696	—	215	59
The Ohio University	111	—	30	—	390	—	17	2	—	—	59	3	501	—	106	5
The Central State College	59	—	—	—	84	—	—	—					143	—	—	—
The University of Akron	50	—	—	—	136	—	7	—	—	—	31	—	186	—	38	—
The University of Cincinnati	124	—	16	—	136	—	61	—	—	—	45	1	260	—	122	1
The University of Toledo	35	—	23	—	118	—	9	—	—	—	41	2	153	—	73	2
Antioch College					11	—	—	—					11	—	—	—
Ashland College	19	—	—	—	61	—	—	—					80	—	—	—
Athenaeum of Ohio																
Baldwin-Wallace College	65	—	—	—	80	—	—	—					145	—	—	—
Borromeo Seminary of Ohio																
Bluffton College	10	—	—	—	29	—	—	—					39	—	—	—
Capital University	27	—	—	—	71	—	—	—					98	—	—	—
Case Inst. of Technology																
Cincinnati Bible Seminary																
Cleveland Inst. of Music																
Cleveland Marshall Law School																
College of Mt. St. Joseph	6	—	—	—	67	—	—	—					73	—	—	—
College of St. Mary of Springs	4	—	—	—	9	—	—	—					13	—	—	—
College of Steubenville					39	—	—	—					39	—	—	—
College of Wooster	10	—	—	—									10	—	—	—
Defiance College	6	—	—	—	38	—	—	—					44	—	—	—
Denison University	4	—	—	—									4	—	—	—
Dyke College																
Evang. Lutheran Theol. Seminary																
Fenn College	2	—	—	—	21	—	—	—					23	—	—	—
Findlay College	11	—	—	—	24	—	—	—					35	—	—	—
Franklin University																
Hebrew Un. Coll. Jewish Inst.	—	—	—	—									—	—	—	—
Heidelberg College	24	—	—	—	47	—	—	—					71	—	—	—
Hiram College	5	—	—	—	16	—	—	—					21	—	—	—
John Carroll University	7	—	—	—	1	—	24	—					8	—	24	—
Kenyon College																
Lake Erie College	—	1	—	—	27	—	—	—					27	1	—	—
Malone College					42	—	—	—					42	—	—	—
Marietta College	5	—	—	—									5	—	—	—
Mary Manse College	15	—	—	—	88	10	—	—					103	10	—	—
Mount Union College	3	—	—	—	50	—	—	—					53	—	—	—
Muskingum College	25	—	—	—	57	—	—	—					82	—	—	—
Notre Dame College	10	—	—	—									10	—	—	—
Oberlin College	17	—	—	—	5	—	—	—	—	—	13	—	22	—	13	—
Ohio College of Podiatry																
Ohio Northern University	38	—	—	—	79	—	—	—					117	—	—	—
Ohio Wesleyan University	9	—	—	—	49	—	—	—					58	—	—	—
Otterbein College	26	—	—	—	43	—	—	—					69	—	—	—
Our Lady of Cincinnati College					49	—	—	—					49	—	—	—
Pontif. College Josephinium																
Rio Grande College					56	—	—	—					56	—	—	—
St. John College of Cleveland					118	—	11	—					118	—	11	—
Salmon P. Chase College-Law																
Tiffin University																
United Theological Seminary																
University of Dayton	37	—	—	—	137	—	—	—	—	—	3	—	174	—	3	—
Ursuline College	1	—	—	—									1	—	—	—
Walsh College																
Western College for Women					6	—	—	—					6	—	—	—
Western Reserve University	21	—	22	1	34	—	—	—	—	—	138	34	55	—	160	35
Wilberforce University	6	—	—	—	17	—	—	—					23	—	—	—
Wilmington College	32	—	—	—	36	—	—	—					68	—	—	—
Wittenberg College	43	—	—	—	91	—	2	—	—	—	37	—	134	—	39	—
Xavier University	7	—	—	—	—	—	6	—	—	—	95	—	7	—	101	—
Youngstown University	77	—	—	—	258	—	—	—					335	—	—	—
	1864	1	341	18	4295	10	253	2	—	—	938	84	6159	11	1532	104

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

INSTITUTION	FIELD OF STUDY															
	Engineering				English and Journalism				Fine and Applied Arts				Foreign Language & Literature			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.					110	—	17	1	52	—	25	—	31	—	—	—
The Kent State University					120	—	12	—	53	—	22	—	52	—	14	—
The Miami University					115	—	6	—	38	—	12	—	53	—	—	—
The Ohio State University	—	263	123	38	213	—	36	5	132	—	62	25	85	—	19	9
The Ohio University	130	—	14	—	161	—	28	—	129	—	29	4	22	—	1	—
The Central State College					8	—	—	—					3	—	—	—
The University of Akron	54	—	28	—	29	—	2	—	13	—	3	—	13	—	—	—
The University of Cincinnati	256	—	41	1	57	—	3	1	161	—	15	—	26	—	10	4
The University of Toledo	103	—	28	—	23	—	7	—	5	—	—	—	10	—	1	—
Antioch College	8	—	—	—	12	—	—	—	24	—	—	—	5	—	—	—
Ashland College					12	—	—	—	3	—	—	—	2	—	—	—
Athenaeum of Ohio																
Baldwin-Wallace College					17	—	—	—	16	—	—	—	22	—	—	—
Borromeo Seminary of Ohio					13	—	—	—					5	—	—	—
Bluffton College					3	—	—	—					1	—	—	—
Capital University					18	—	—	—	13	—	—	—	5	—	—	—
Case Inst. of Technology	183	—	90	31												
Cincinnati Bible Seminary																
Cleveland Inst. of Music									13	—	7	—				
Cleveland Marshall Law School																
College of Mt. St. Joseph					11	—	—	—	6	—	—	—	6	—	—	—
College of St. Mary of Springs					20	—	—	—					5	—	—	—
College of Steubenville					11	—	—	—								
College of Wooster					33	—	—	—	16	—	—	—	16	—	—	—
Defiance College					6	—	—	—	4	—	—	—				
Denison University					42	—	—	—	40	—	—	—	21	—	—	—
Dyke College																
Evang. Lutheran Theol. Seminary																
Fenn College	138	—	—	—	14	—	—	—								
Findlay College					11	—	—	—	5	—	—	—				
Franklin University																
Hebrew Un. Coll. Jewish Inst.									—	2	—	—				
Heidelberg College					13	—	—	—	11	—	—	—	12	—	—	—
Hiram College					19	—	—	—	9	—	—	—	3	—	—	—
John Carroll University					91	—	14	—					13	—	3	—
Kenyon College					27	—	—	—					6	—	—	—
Lake Erie College					21	—	—	—	19	—	—	—	20	—	—	—
Malone College					4	—	—	—					1	—	—	—
Marietta College					26	—	—	—	14	—	—	—	10	—	—	—
Mary Manse College					10	—	—	—	8	—	—	—	1	—	—	—
Mount Union College					29	—	—	—	3	—	—	—	7	—	—	—
Muskingum College					14	—	—	—	8	—	—	—	16	—	—	—
Notre Dame College					16	—	—	—	1	—	—	—	7	—	—	—
Oberlin College					30	—	—	—	90	—	5	—	44	—	—	—
Ohio College of Podiatry																
Ohio Northern University	35	—	—	—	9	—	—	—					1	—	—	—
Ohio Wesleyan University					46	—	—	—	32	—	—	—	22	—	—	—
Otterbein College					22	—	—	—	14	—	—	—	19	—	—	—
Our Lady of Cincinnati College					9	—	—	—	8	—	—	—	9	—	—	—
Pontif. College Josephinium																
Rio Grande College					1	—	—	—								
St. John College of Cleveland																
Salmon P. Chase College-Law																
Tiffin University																
United Theological Seminary																
University of Dayton	127	—	—	—	59	—	2	—	20	—	—	—	18	—	—	—
Ursuline College					18	—	—	—	11	—	—	—				
Walsh College					5	—	—	—					1	—	—	—
Western College for Women					12	—	—	—	3	—	—	—	6	—	—	—
Western Reserve University					58	—	18	7	23	—	25	3	32	—	22	1
Wilberforce University					1	—	—	—								
Wilmington College					10	—	—	—	1	—	—	—				
Wittenberg College					43	—	—	—	13	—	—	—	19	—	—	—
Xavier University					26	—	33	—	—	—	6	—	19	—	8	—
Youngstown University	103	—	—	—	28	—	—	—	7	—	—	—	11	—	—	—
	1137	263	324	70	1706	—	178	14	1018	2	211	32	680	—	78	14

Degree Codes:

1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

	FIELD OF STUDY															
	HEALTH PROFESSIONS															
INSTITUTION	Dentistry				Medicine				Nursing				Optometry			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.																
The Kent State University																
The Miami University																
The Ohio State University	—	137	—	—	—	141	—	—	159	—	16	—	—	29	—	—
The Ohio University																
The Central State College																
The University of Akron									7	—	—	—				
The University of Cincinnati					—	83	—	—	72	—	4	—				
The University of Toledo																
Antioch College																
Ashland College																
Athenaeum of Ohio																
Baldwin-Wallace College																
Borromeo Seminary of Ohio																
Bluffton College																
Capital University									33	—	—	—				
Case Inst. of Technology																
Cincinnati Bible Seminary																
Cleveland Inst. of Music																
Cleveland Marshall Law School																
College of Mt. St. Joseph									34	—	—	—				
College of St. Mary of Springs																
College of Steubenville																
College of Wooster																
Defiance College																
Denison University																
Dyke College																
Evang. Lutheran Theol. Seminary																
Fenn College																
Findlay College																
Franklin University																
Hebrew Un. Coll. Jewish Inst.																
Heidelberg College																
Hiram College																
John Carroll University																
Kenyon College																
Lake Erie College																
Malone College																
Marietta College																
Mary Manse College																
Mount Union College																
Muskingum College																
Notre Dame College																
Oberlin College																
Ohio College of Podiatry																
Ohio Northern University																
Ohio Wesleyan University																
Otterbein College																
Our Lady of Cincinnati College									8	—	—	—				
Pontif. College Josephinium																
Rio Grande College																
St. John College of Cleveland									39	—	—	—				
Salmon P. Chase College-Law																
Tiffin University																
United Theological Seminary																
University of Dayton									12	—	—	—				
Ursuline College																
Walsh College																
Western College for Women																
Western Reserve University	—	66	—	—	—	73	—	—	—	89	30	—				
Wilberforce University																
Wilmington College																
Wittenberg College									2	—	—	—				
Xavier University																
Youngstown University									11	—	—	—				
	—	203	—	—	—	297	—	—	377	89	50	—	—	29	—	—

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued
EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

INSTITUTION	FIELD OF STUDY															
	HEALTH PROFESSIONS															
	Pharmacy				Veterinary Med.				Other Health Prof.				Total			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.									7	—	—	—	7	—	—	—
The Kent State University									1	—	—	—	1	—	—	—
The Miami University																
The Ohio State University	—	35	13	4	—	58	—	—	92	—	47	3	251	400	76	7
The Ohio University									6	—	—	—	6	—	—	—
The Central State College																
The University of Akron									8	—	—	—	15	—	—	—
The University of Cincinnati	—	11	1	—					21	—	2	8	93	94	7	8
The University of Toledo	20	—	—	—					7	—	—	—	27	—	—	—
Antioch College																
Ashland College																
Athenaeum of Ohio																
Baldwin-Wallace College																
Borromeo Seminary of Ohio																
Bluffton College																
Capital University									3	—	—	—	36	—	—	—
Case Inst. of Technology																
Cincinnati Bible Seminary																
Cleveland Inst. of Music																
Cleveland Marshall Law School																
College of Mt. St. Joseph									8	—	—	—	42	—	—	—
College of St. Mary of Springs									5	—	—	—	5	—	—	—
College of Steubenville									3	—	—	—	3	—	—	—
College of Wooster																
Defiance College																
Denison University																
Dyke College																
Evang. Lutheran Theol. Seminary																
Fenn College																
Findlay College																
Franklin University																
Hebrew Un. Coll. Jewish Inst.																
Heidelberg College																
Hiram College																
John Carroll University																
Kenyon College																
Lake Erie College																
Malone College																
Marietta College																
Mary Manse College									5	—	—	—	5	—	—	—
Mount Union College									6	—	—	—	6	—	—	—
Muskingum College																
Notre Dame College																
Oberlin College																
Ohio College of Podiatry									—	40	—	—	—	40	—	—
Ohio Northern University	40	—	—	—									40	—	—	—
Ohio Wesleyan University																
Otterbein College																
Our Lady of Cincinnati College									1	—	—	—	9	—	—	—
Pontif. College Josephinium																
Rio Grande College																
St. John College of Cleveland													39	—	—	—
Salmon P. Chase College-Law																
Tiffin University																
United Theological Seminary																
University of Dayton									9	—	—	—	21	—	—	—
Ursuline College																
Walsh College																
Western College for Women																
Western Reserve University									—	—	4	—	—	228	34	—
Wilberforce University																
Wilmington College																
Wittenberg College									3	—	—	—	5	—	—	—
Xavier University									—	—	19	—	—	—	19	—
Youngstown University									4	—	—	—	15	—	—	—
	60	46	14	4	—	58	—	—	189	40	72	11	626	762	136	15

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

INSTITUTION	FIELD OF STUDY											
	Geography				Home Economics				Law			
	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.	2	—	—	—	10	—	—	—				
The Kent State University	6	—	4	—	20	—	2	—				
The Miami University	10	—	5	—	15	—	2	—				
The Ohio State University	11	—	3	2	73	—	12	5	—	84	—	—
The Ohio University	3	—	—	—	46	—	2	—				
The Central State College	1	—	—	—								
The University of Akron					3	—	—	—	—	24	—	—
The University of Cincinnati	6	—	5	—	15	—	—	—	—	37	—	—
The University of Toledo					1	—	—	—	—	22	—	—
Antioch College	7	—	—	—								
Ashland College												
Athenaeum of Ohio												
Baldwin-Wallace College	3	—	—	—	6	—	—	—				
Borromeo Seminary of Ohio												
Bluffton College												
Capital University												
Case Inst. of Technology												
Cincinnati Bible Seminary												
Cleveland Inst. of Music												
Cleveland Marshall Law School									—	73	7	1
College of Mt. St. Joseph					5	—	—	—				
College of St. Mary of Springs					2	—	—	—				
College of Steubenville												
College of Wooster												
Defiance College												
Denison University												
Dyke College												
Evang. Lutheran Theol. Seminary												
Fenn College												
Findlay College												
Franklin University									—	16	—	—
Hebrew Un. Coll. Jewish Inst.												
Heidelberg College												
Hiram College					8	—	—	—				
John Carroll University												
Kenyon College												
Lake Erie College					3	—	—	—				
Malone College												
Marietta College					3	—	—	—				
Mary Manse College												
Mount Union College												
Muskingum College					11	—	—	—				
Notre Dame College					5	—	—	—				
Oberlin College					1	—	—	—				
Ohio College of Podiatry												
Ohio Northern University									—	24	—	—
Ohio Wesleyan University	4	—	—	—	17	—	—	—				
Otterbein College												
Our Lady of Cincinnati College					6	—	—	—				
Pontif. College Josephinium												
Rio Grande College												
St. John College of Cleveland												
Salmon P. Chase College-Law									—	38	—	—
Tiffin University												
United Theological Seminary												
University of Dayton					13	—	—	—				
Ursuline College					6	—	—	—				
Walsh College												
Western College for Women					5	—	—	—				
Western Reserve University	2	—	—	—	5	—	3	—	—	62	3	—
Wilberforce University												
Wilmington College												
Wittenberg College	2	—	—	—								
Xavier University												
Youngstown University					7	—	—	—				
	57	—	17	2	286	—	21	5	—	380	10	1

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

INSTITUTION	FIELD OF STUDY															
	Library Science				Mathematical Subjects				Military, Naval, Air Science				Philosophy			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.					55	—	24	—					5	—	—	—
The Kent State University	—	14	—	—	67	—	3	—					1	—	—	—
The Miami University					63	—	7	—	12	—	—	—	4	—	2	—
The Ohio State University					111	—	17	7					13	—	1	1
The Ohio University					53	—	5	—					6	—	—	—
The Central State College					14	—	—	—					2	—	—	—
The University of Akron					32	—	2	—					4	—	—	—
The University of Cincinnati					37	—	9	8					9	—	1	1
The University of Toledo	3	—	3	—	23	—	5	—					3	—	1	—
Antioch College					9	—	—	—					12	—	—	—
Ashland College					14	—	—	—								
Athenaeum of Ohio													106	—	22	—
Baldwin-Wallace College					5	—	—	—					3	—	—	—
Borromeo Seminary of Ohio													13	—	—	—
Bluffton College					6	—	—	—								
Capital University					19	—	—	—					2	—	—	—
Case Inst. of Technology					27	—	12	—								
Cincinnati Bible Seminary																
Cleveland Inst. of Music																
Cleveland Marshall Law School																
College of Mt. St. Joseph					4	—	—	—					2	—	—	—
College of St. Mary of Springs					4	—	—	—								
College of Steubenville					1	—	—	—								
College of Wooster					13	—	—	—					2	—	—	—
Defiance College					7	—	—	—								
Denison University					9	—	—	—					5	—	—	—
Dyke College																
Evang. Lutheran Theol. Seminary																
Fenn College					2	—	—	—								
Findlay College					4	—	—	—					1	—	—	—
Franklin University																
Hebrew Un. Coll. Jewish Inst.																
Heidelberg College					19	—	—	—					4	—	—	—
Hiram College					12	—	—	—					1	—	—	—
John Carroll University					17	—	5	—					8	—	—	—
Kenyon College					4	—	—	—					9	—	—	—
Lake Erie College					1	—	—	—								
Malone College					1	—	—	—								
Marietta College					26	—	—	—								
Mary Manse College					1	—	—	—								
Mount Union College					17	—	—	—								
Muskingum College					21	—	—	—					4	—	—	—
Notre Dame College					4	—	—	—								
Oberlin College					22	—	—	—					5	—	—	—
Ohio College of Podiatry																
Ohio Northern University					11	—	—	—								
Ohio Wesleyan University					15	—	—	—					7	—	—	—
Otterbein College					12	—	—	—								
Our Lady of Cincinnati College					8	—	—	—					7	—	—	—
Pontif. College Josephinium													21	—	—	—
Rio Grande College					4	—	—	—								
St. John College of Cleveland																
Salmon P. Chase College-Law																
Tiffin University																
United Theological Seminary																
University of Dayton					28	—	2	—					6	—	1	—
Ursuline College					8	—	—	—								
Walsh College					3	—	—	—								
Western College for Women					4	—	—	—					2	—	—	—
Western Reserve University	—	103	—	—	12	—	9	1					1	—	—	—
Wilberforce University					7	—	—	—								
Wilmington College					10	—	—	—								
Wittenberg College					19	—	—	—					7	—	—	—
Xavier University					3	—	15	—					9	—	1	—
Youngstown University					18	—	—	—					10	—	—	—
	3	117	3	—	886	—	115	16	12	—	—	—	294	—	29	2

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

INSTITUTION	FIELD OF STUDY															
	Physical Sciences				Psychology				Religion				Trade and Indus. Training			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.	68	—	7	—	15	—	9	—								
The Kent State University	57	—	9	—	34	—	10	—					28	—	—	—
The Miami University	61	—	30	—	61	—	8	—	2	—	—	—	16	—	—	—
The Ohio State University	114	—	85	46	76	—	43	35								
The Ohio University	64	—	12	3	26	—	24	—					39	—	—	—
The Central State College	9	—	—	—	6	—	—	—					5	—	—	—
The University of Akron	37	—	16	9	11	—	7	—								
The University of Cincinnati	61	—	8	33	61	—	6	3								
The University of Toledo	12	—	3	—	6	—	8	—								
Antioch College	19	—	—	—	7	—	—	—								
Ashland College	7	—	—	—	10	—	—	—	—	2	—	—				
Athenaeum of Ohio									—	—	7	—				
Baldwin-Wallace College	19	—	—	—	19	—	—	—	6	—	—	—				
Borromeo Seminary of Ohio																
Bluffton College	4	—	—	—	4	—	—	—								
Capital University	12	—	—	—	4	—	—	—	5	—	—	—				
Case Inst. of Technology	79	—	18	17												
Cincinnati Bible Seminary									35	7	—	—				
Cleveland Inst. of Music																
Cleveland Marshall Law School																
College of Mt. St. Joseph	2	—	—	—												
College of St. Mary of Springs	4	—	—	—												
College of Steubenville	3	—	—	—	2	—	—	—								
College of Wooster	38	—	—	—	13	—	—	—	14	—	—	—				
Defiance College	3	—	—	—	4	—	—	—	3	—	—	—				
Denison University	8	—	—	—	16	—	—	—	4	—	—	—				
Dyke College																
Evang. Lutheran Theol. Seminary									—	57	—	—				
Fenn College	10	—	—	—	3	—	—	—								
Findlay College	6	—	—	—	2	—	—	—	2	—	—	—				
Franklin University																
Hebrew Un. Coll. Jewish Inst.									2	42	29	6				
Heidelberg College	11	—	—	—	9	—	—	—	1	—	—	—				
Hiram College	7	—	—	—	4	—	—	—	7	—	—	—				
John Carroll University	35	—	20	—	2	—	—	—								
Kenyon College	8	—	—	—	7	—	—	—	—	20	—	—				
Lake Erie College	2	—	—	—	5	—	—	—	1	—	—	—				
Malone College	1	—	—	—					5	—	—	—				
Marietta College	39	—	—	—	4	—	—	—	2	—	—	—				
Mary Manse College	2	—	—	—	1	—	—	—								
Mount Union College	18	—	—	—	5	—	—	—	2	—	—	—				
Muskingum College	17	—	—	—	14	—	—	—	3	—	—	—				
Notre Dame College	6	—	—	—												
Oberlin College	27	—	3	—	22	—	—	—	4	18	11	—				
Ohio College of Podiatry																
Ohio Northern University	7	—	—	—	5	—	—	—								
Ohio Wesleyan University	33	—	—	—	29	—	—	—	5	—	—	—				
Otterbein College	9	—	—	—	8	—	—	—	2	—	—	—				
Our Lady of Cincinnati College	2	—	—	—												
Pontif. College Josephinium																
Rio Grande College																
St. John College of Cleveland																
Salmon P. Chase College-Law																
Tiffin University																
United Theological Seminary									—	41	1	—				
University of Dayton	37	—	1	—	10	—	—	—	5	—	—	—				
Ursuline College	3	—	—	—												
Walsh College	1	—	—	—												
Western College for Women					4	—	—	—	3	—	—	—				
Western Reserve University	70	—	24	13	39	—	13	14	—	—	1	—				
Wilberforce University					2	—	—	—	2	—	—	—				
Wilmington College	4	—	—	—	2	—	—	—	5	—	—	—	2	—	—	—
Wittenberg College	18	—	—	—	15	—	—	—	9	30	1	—				
Xavier University	23	—	9	—	21	—	5	—	—	—	1	—				
Youngstown University	19	—	—	—	26	—	—	—								
	1096	—	245	121	614	—	133	52	129	217	51	6	90	—	—	—

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

	FIELD OF STUDY															
	SOCIAL SCIENCES															
INSTITUTION	Basic				Applied				Total				Miscellaneous Fields			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
The Bowling Green State Univ.	144	—	18	—					144	—	18	—	4	—	—	—
The Kent State University	223	—	40	—	31	—	—	—	254	—	40	—	—	—	5	—
The Miami University	209	—	17	—					209	—	17	—	5	—	—	—
The Ohio State University	462	—	60	19	81	—	68	19	543	—	128	38	37	—	—	—
The Ohio University	137	—	10	—					137	—	10	—	42	—	—	—
The Central State College	40	—	—	—	14	—	—	—	54	—	—	—				
The University of Akron	49	—	4	—	4	—	—	—	28	—	—	—	2	—	—	—
The University of Cincinnati	154	—	29	4	2	—	8	—	156	—	37	4	—	—	3	—
The University of Toledo	82	—	6	—	5	—	1	—	87	—	7	—	16	—	—	—
Antioch College	72	—	—	—					72	—	—	—				
Ashland College	21	—	—	—					21	—	—	—	1	—	—	—
Athenaeum of Ohio																
Baldwin-Wallace College	49	—	—	—					49	—	—	—	1	—	—	—
Borromeo Seminary of Ohio	11	—	—	—					11	—	—	—				
Bluffton College	3	—	—	—					3	—	—	—				
Capital University	71	—	—	—					71	—	—	—	10	—	—	—
Case Inst. of Technology													—	—	3	—
Cincinnati Bible Seminary																
Cleveland Inst. of Music																
Cleveland Marshall Law School																
College of Mt. St. Joseph	17	—	—	—					17	—	—	—				
College of St. Mary of Springs	17	—	—	—					17	—	—	—				
College of Steubenville	10	—	—	—					10	—	—	—				
College of Wooster	108	—	—	—					108	—	—	—				
Defiance College	26	—	—	—					26	—	—	—	2	—	—	—
Denison University	152	—	—	—					152	—	—	—				
Dyke College	6	—	—	—					6	—	—	—				
Evang. Lutheran Theol. Seminary																
Fenn College	13	—	—	—					13	—	—	—				
Findlay College	24	—	—	—					24	—	—	—				
Franklin University																
Hebrew Un. Coll. Jewish Inst.																
Heidelberg College	30	—	—	—					30	—	—	—				
Hiram College	56	—	—	—					56	—	—	—	14	—	—	—
John Carroll University	134	—	17	—	6	—	—	—	140	—	17	—				
Kenyon College	44	—	—	—					44	—	—	—				
Lake Erie College	29	—	—	—					29	—	—	—	4	—	—	—
Malone College	13	—	—	—					13	—	—	—	5	—	—	—
Marietta College	61	—	—	—					61	—	—	—				
Mary Manse College	9	—	—	—	2	—	—	—	11	—	—	—				
Mount Union College	53	—	—	—					53	—	—	—				
Muskingum College	93	—	—	—					93	—	—	—				
Notre Dame College	27	—	—	—					27	—	—	—				
Oberlin College	140	—	1	—					140	—	1	—				
Ohio College of Podiatry																
Ohio Northern University	80	—	—	—	3	—	—	—	83	—	—	—				
Ohio Wesleyan University	129	—	—	—					129	—	—	—	3	—	—	—
Otterbein College	53	—	—	—					53	—	—	—	1	—	—	—
Our Lady of Cincinnati College	19	—	—	—					19	—	—	—				
Pontif. College Josephinium																
Rio Grande College	20	—	—	—					20	—	—	—				
St. John College of Cleveland	25	—	4	—					25	—	4	—				
Salmon P. Chase College-Law																
Tiffin University																
United Theological Seminary																
University of Dayton	113	—	—	—					113	—	—	—				
Ursuline College	17	—	—	—					17	—	—	—				
Walsh College	12	—	—	—					12	—	—	—	5	—	—	—
Western College for Women	28	—	—	—					28	—	—	—				
Western Reserve University	96	—	42	9	—	67	—	3	96	67	42	12	8	—	4	—
Wilberforce University	17	—	—	—					17	—	—	—				
Wilmington College	19	—	—	—					19	—	—	—				
Wittenberg College	76	—	—	—					76	—	—	—				
Xavier University	91	—	42	—	6	—	—	—	97	—	42	—				
Youngstown University	96	—	—	—					96	—	—	—				
	3655	—	286	32	154	67	77	22	3809	67	363	54	160	—	15	—

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

TABLE 14—Continued

EARNED DEGREES CONFERRED
1963-64
OHIO PUBLIC AND PRIVATE COLLEGES AND UNIVERSITIES

INSTITUTION	ALL FIELDS OF STUDY			
	GRAND TOTAL			
	1	2	3	4
The Bowling Green State Univ.	1470	—	227	1
The Kent State University	1721	35	498	2
The Miami University	1448	13	308	—
The Ohio State University	3131	780	958	341
The Ohio University	1728	—	247	12
The Central State College	304	—	—	—
The University of Akron	595	24	117	9
The University of Cincinnati		185	340	70
The University of Toledo	640	22	179	2
Antioch College	216	—	—	—
Ashland College	180	2	—	—
Athenaeum of Ohio	106	—	29	—
Baldwin-Wallace College	387	—	—	—
Borromeo Seminary of Ohio	42	—	—	—
Bluffton College	85	—	—	—
Capital University	312	—	—	—
Case Inst. of Technology	324	—	163	54
Cincinnati Bible Seminary	35	7	—	—
Cleveland Inst. of Music	13	—	7	—
Cleveland Marshall Law School	—	73	7	1
College of Mt. St. Joseph	170	—	—	—
College of St. Mary of Springs	75	—	—	—
College of Steubenville	94	—	—	—
College of Wooster	280	—	—	—
Defiance College	114	—	—	—
Denison University	334	—	—	—
Dyke College	62	—	—	—
Evang. Lutheran Theol. Seminary	—	57	—	—
Fenn College	288	—	—	—
Findlay College	111	—	—	—
Franklin University	21	16	—	—
Hebrew Un. Coll. Jewish Inst.	2	44	29	6
Heidelberg College	207	—	—	—
Hiram College	172	—	—	—
John Carroll University	436	—	86	—
Kenyon College	119	20	—	—
Lake Erie College	135	1	—	—
Malone College	76	—	—	—
Marietta College	268	—	—	—
Mary Manse College	148	10	—	—
Mount Union College	212	—	—	—
Muskingum College	291	—	—	—
Notre Dame College	85	—	—	—
Oberlin College	448	18	36	—
Ohio College of Podiatry	—	40	—	—
Ohio Northern University	321	24	—	—
Ohio Wesleyan University	441	—	—	—
Otterbein College	240	—	—	—
Our Lady of Cincinnati College	137	—	—	—
Pontif. College Josephinium	21	—	—	—
Rio Grande College	84	—	—	—
St. John College of Cleveland	157	—	11	—
Salmon P. Chase College-Law	—	38	—	—
Tiffin University	24	—	—	—
United Theological Seminary	—	41	1	—
University of Dayton	827	—	11	—
Ursuline College	74	—	—	—
Walsh College	47	—	—	—
Western College for Women	76	—	—	—
Western Reserve University	486	532	369	94
Wilberforce University	65	—	—	—
Wilmington College	145	—	—	—
Wittenberg College	409	30	40	—
Xavier University	373	—	368	—
Youngstown University	918	—	—	—
	23347	2012	4031	592

Source of Data: Unpublished data, U.S. Office of Education.

Degree Codes:
1. Four-year bachelor's and first professional
2. First professional requiring five or more years
3. Second-level (Master's except first professional)
4. Doctorate (Ph.D., Ed.D., etc.)

Ohio University has eliminated its program of instruction in agriculture.

In the field of architecture, degrees were awarded by The University of Cincinnati, The Ohio State University, The Kent State University, The Miami University, The Ohio University, and Western Reserve University.

The biological sciences were an extensive field of study involving most institutions in Ohio.

The field of business and commerce accounted for about 13 percent of all undergraduate degrees, and nearly two-thirds of these degrees were awarded by public institutions.

Some 25 percent of undergraduate degrees awarded in 1964 were in the field of teacher education, and 60 percent of these degrees were provided by public institutions.

There were 1,400 undergraduate degrees in engineering awarded in 1964 by 11 colleges of engineering. The large programs in this field include those of four state-assisted institutions of higher education and four private institutions as of that year.

English and journalism were a major field of study at the undergraduate level. So, also, was the field of fine and applied arts. There were 772 degrees in foreign languages in 1964.

There were only two schools of dentistry awarding degrees in 1964; and only one of these was at a state-assisted institution. Degrees in medicine were awarded by three institutions: one state, one municipal, and one private. Degrees in nursing were awarded by 11 institutions. Only one institution had a program in optometry. There were four institutions conferring degrees in pharmacy in 1964, one in veterinary medicine, and 20 in other health-related professions.

Degrees in home economics were awarded by 24 institutions, of which eight were state-assisted.

Law degrees were awarded by nine institutions.

Degrees in library science were conferred by three institutions.

Mathematics was a field of extensive study at most institutions with a four-year program.

Only The Miami University had a degree program in naval science as such, and none of the Ohio institutions conferred degrees in military or air science.

Nearly 1,100 degrees were conferred in 1964 at the baccalaureate level in the physical sciences, and undergraduate colleges generally participated in this field.

Only one public institution provided degrees in the subject matter field of religion.

There were some 90 degrees in 1964 in industrial technology provided by four state institutions and one private college.

The baccalaureates in the social sciences came to 16 percent of all undergraduate degrees and were widely distributed among many institutions.

At the baccalaureate level, the largest number of degrees was awarded in 1964 by The Ohio State University. Other institutions awarding more than 1,000 undergraduate degrees were Bowling Green, Kent, Miami, Ohio, and Cincinnati.

We have not commented here about Master's and Doctorate degrees. This subject will be considered in chapter 5.

Arts and Sciences

In the medieval university as it first emerged in Western Europe at the beginning of the Thirteenth Century, there were three major areas of study: theology, medicine, and the arts and sciences (the *studium generale*). To this trio, law was quickly added. Through the intervening centuries the disciplines of the arts and sciences—the humanities, the social sciences, the biological sciences, the physical sciences, and mathematics—have been considered to be the heart of higher education. Upon these disciplines have been based various professional fields of study. The disciplines themselves have become more and more highly specialized and in recent years have added substantially to the store of man's knowledge for his personal satisfaction and for practical application to the many problems of social life.

When colleges were first created in colonial America, the arts and sciences in the classical form familiar to English graduates of Oxford and Cambridge were incorporated as the foundation of a desirable higher education. Professional education was added by the individual to his formal education in the arts and sciences. This was largely the pattern of American higher education until 1860. For example, engineering education had made little headway in the United States prior to the Civil War.

After 1865 great changes began to take place in the character of American higher education. The university began to grow around the college or even to develop separately. The university was not just a graduate school added to a college; the university embraced a widely expanding professional education as well. This movement was encouraged by the Morrill Act of 1862. It was advanced by the growing needs of American society undergoing rapid industrial and technical development. Agricultural education was included in the scope of the land-grant colleges, and engineering education was added both at the land-grant colleges and at many existing institutions. In due course, teacher education and business administration also became important elements of undergraduate education in a university.

During all these changes, the separate liberal arts college or the colleges of arts and sciences as a component of a university retained major importance in the structure of American higher education. In a sense, many professional fields of education involved the application of knowledge from the basic disciplines to specific problem areas, whether these were managing the business corporation, teaching in elementary and secondary schools, or contributing to the technical development of industry and agriculture.

The arts and sciences at the undergraduate level of higher education have had three primary purposes to realize. One is to provide for all undergraduate students some understanding of the intellectual heritage of Western man; this function is often referred to as general education. A second purpose is to provide specialized knowledge in a particular art or science, or in an interrelated group of arts and sciences, essential as the basis of undergraduate professional education. The third purpose is to provide specialized undergraduate education as the foundation for graduate study in the arts and sciences or for graduate professional education as in law, medicine, theology, and other fields.

It must be obvious from this brief description that education in the arts and sciences remains at the very center of the higher education enterprise. The consultants to the Ohio Board of Regents did not undertake any special inquiry into the arts and sciences at the undergraduate level. No special problems have been brought to the attention of the Board's staff in this vitally important area of higher education. State-assisted institutions in Ohio appear to have developed substantial educational strength in this program field of instruction. It is assumed that there are always opportunities for improvement in any field of study and that the arts and sciences in the state-assisted institutions are no exception. It is also assumed that the faculties and other responsible officials of state-assisted institutions are much concerned to explore and to promote such improvements.

Lower Division Programs

For many years undergraduate education in the arts and sciences has tended to be divided into two distinct parts, usually referred to as lower division and upper division. The lower division program is of four semesters' or six quarters' duration. It offers general introductory courses in various disciplines and a limited number of core courses providing some greater degree of depth in a particular discipline. A combination of these introductory courses and core courses by broad categories of disciplines (humanities, social sciences, biological sciences, physical sciences, and mathematics) ordinarily meets the concept of a general education. The upper division of the arts and sciences offers specialized courses in the various disciplines. It is possible that a professional field of study will also present some lower division courses, usually as an introduction to the field, such as introduction to teaching, introduction to business management, or introduction to engineering. The course requirements in general education are often reduced for individual students upon the basis of advanced placement examinations.

Because of this custom of dividing the arts and sciences into lower division and upper division components, and because course work in the arts and sciences at the lower division is prerequisite to specialized study at the upper division in both the arts and sciences and professional fields of study, it is possible geographically to separate lower division and upper division study. Thus, lower division courses in the arts and sciences and as introduction to professional fields of study can be provided in a community college, a general college, or a university branch apart from the central campus of a state-assisted university. Provided the courses are comparable, the instructional standards similar, and the student's academic performance is satisfactory, ready transfer of the student from a lower division program to an upper division program should be possible and should be encouraged.

There is an important reason why upper division programs should be geographically concentrated and should not be so widely distributed geographically as lower division programs. As has been pointed out, upper division course work in the arts and sciences and in professional fields of study tends to be quite specialized. These courses require extensive facilities in laboratories and in libraries in order for the student to carry on his academic work. Furthermore, there are many more students enrolling in lower division programs than in upper division programs. Where an open admission policy is in force, this result will necessarily obtain. It is economical to disperse lower division programs in many different places. It is not economical to disperse upper division programs in all of these same locations.

Technical Education

It is important to distinguish three different kinds of vocational and technical education provided at three different levels of the educational process:

1. Practical Arts Education
2. Vocational Education
3. Technical Education

Practical arts education is usually taught in an elementary school or a junior high school; on occasion it may be included in the curriculum of a senior high school. This instruction may be directed to the acquisition of simple, basic skills in agriculture and horticulture, home economics, industrial arts, typing, and bookkeeping. Such instruction may be considered to develop a part of the student's general knowledge and to have no special or particular vocational orientation.

Vocational education, on the other hand, includes a multitude of training programs directed toward specific job goals. These may include the simpler skills required of a machine operator, truck driver, cook, or hairdresser to the multiple skills required of the automobile mechanic, the electrician, the toolmaker, and the television repairman. Vocational education is designed primarily for the high school student who is seeking his diploma by following a vocational curriculum.

In addition to vocational education in a comprehensive high school or in a specialized vocational high school, vocational education has been offered by some high schools as a retraining program or as an adult education program in the evening. Vocational education is also being offered by training centers set up under various auspices for young people. There are also a number of proprietary vocational schools.

State-assisted colleges and universities are only indirectly interested in all of these various forms of vocational education. The education of teachers for instruction in vocational schools, especially public vocational schools, is properly a function of higher education. Otherwise, vocational education falls outside the scope of interest of higher education.

Technical education in the sense of education beyond the high school intended to prepare students to engage in semi-professional fields of activity does belong in the scope of higher education. Such technical education requires a high school diploma as a prerequisite for admission. Such technical education requires a mastery of basic principles of science in addition to application of these principles to special problems. Technical education seeks to do more than produce a skilled craftsman and should be closely related to higher education.

In Ohio there is some difficulty in the administration of technical education related to higher education as a result of the federal government's National Defense Education Act of 1958 (Title VIII) and the Vocational Education Act of 1963. Because in 1958 there were no community colleges in Ohio, the State Board of Education encouraged the development of 11 technical schools in conjunction with existing vocational high schools. If programs of these schools are to be considered a part of higher education, they will have to meet the standards set up by the Board of Regents for an acceptable higher education program in technical education.

In the field of engineering technology, our consultants point out that the objective in a full-time, two-year program should be to prepare persons to work closely with engineers, and that such education must emphasize broad engineering concepts and practices involving substantial knowledge of mathematics, science, and design. The needs and standards for such a program have been set forth in a publication of the

American Society for Engineering Education.[1] In other fields, such as commercial and business technology and in health technologies, there is somewhat less specific agreement about desirable standards of educational preparation.

In any event, our consultants recommend that technical education should be recognized as a critically needed resource to enable our constantly limited supply of professional personnel to function at the top level of their professional competence. Our consultants also report that Ohio has been slow in developing technical education programs and that much greater attention needs to be given to this field of instructional activity by our institutions of higher education.

Furthermore, our consultants declare that technical education should be recognized as a new dimension of educational opportunity for an increasing number of persons who desire education beyond the high school but for a variety of reasons do not desire to spend four or more years in professional preparation before entering upon gainful employment. Technical education should not be regarded as some inferior variety of educational experience but as a full-fledged partner in the higher educational enterprise.

Three types of higher educational organization exist in Ohio for offering two-year technical programs—(1) community colleges (2) technical institutes and (3) university branches. In addition, the Ohio General Assembly enacted legislation in 1965 authorizing the Board of Regents to approve the awarding of degrees in two-year technical school programs of area vocational schools, subject to standards adopted by the Board of Regents.

Early in 1965 the Board appointed an advisory committee to develop standards for two-year degree programs in the various technologies. This advisory committee included representation from community colleges, technical institutes, state universities, area vocational schools, and the Ohio Department of Education. After many months of conscientious work, the advisory committee presented a proposed list of standards on technical education for consideration by the Board of Regents. The Board adopted these proposed standards without amendment following a public hearing on July 16, 1965.

The Advisory Committee on Technical Education presented its proposed standards to the Board within the context of two fundamental considerations or principles: (1) that any technical education standards adopted by the Board must be identified and associated with a program of higher education and (2) that there would be common standards for approval of a two-year technology degree, regardless of an institution's organizational structure. The Board of Regents fully subscribed to these principles, insisting that the same level of quality be maintained from one institution to another. For example, the graduate of a two-year technical degree program of a technical school or a technical institute should have completed the same kind of preparation as a graduate of a similar program in a community college or a university branch.

The standards for two-year technologies adopted by the Board of Regents contain a statement of objectives which includes the following major purposes:

1. To encourage the building of faculties which are fully competent to teach college level subject matter.
2. To encourage the development of curricula which are of sufficient substance as to stand unchallenged alongside other programs of higher education.
3. To encourage the admission of students who are adequately prepared to benefit by this program of higher education.
4. To encourage the guarantee of minimum institutional resources in advance of the award of higher education degrees, such as will reassure prospective enrollees that a "going-concern" will continue in the future to validate the educational program.

Standards are outlined for approval of the two-year degree in technical education programs under five major headings: faculty, students and student services, curriculum, library, and institutional requirements. Faculty standards provide guidelines for educational preparation, related work experience, full-time teaching requirements, and numbers of students per class. Standards for students and student services refer to minimum entrance requirements, guidance and counseling, and placement services. Curriculum standards deal with the awarding of academic credits, minimum semester credit hours for basic sciences, non-technical subjects, and technical courses, length of courses, and transferability of credits. Standards for libraries give emphasis to adequate facilities and holdings, and to adequate financial support. In the final major heading, institutional requirements, the following general policies have been set forth which relate technical education offerings to a strong institutional setting:

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[1] *Characteristics of Excellence in Engineering Technology Education* (American Society for Engineering Education, 1962). Copies available from Secretary, The American Society for Engineering Education, University of Illinois, Urbana, Illinois.

1. The technical institution should provide a program which is sufficiently broad as to offer a reasonable choice of curricula to prospective students, and should possess a student body sufficiently well developed as to demonstrate the institution's public acceptance as a permanent establishment. As a general rule, an institution should offer a minimum of four distinctive curricula, each enrolling 50 full-time students in order to demonstate the institutional viability envisaged by the standard.
2. The technical institution should demonstrate a clear promise of attaining an enrollment of 500 full-time equivalent students within three years after becoming a degree granting institution.
3. The technical institution should possess physical facilities including classrooms, laboratories, offices, and equipment adequate to the teaching program which it conducts, and which lend themselves to the establishment of an institutional identity apart from secondary programs.
4. The technical instiution should be able to demonstrate the adequacy of its resources for supporting present and future operating budgets.

The preceding standards provide the academic framework for the growth of technical education in Ohio which can be clearly identified as a program of higher education. The fact that minimum standards now exist for the approval of degree programs in technical education may result in some institutions or programs being disapproved for degree purposes. Such disapproval may only indicate that the particular institution is offering a program more properly identified as vocational education rather than technical education. While there is unquestionably a need to provide more programs in vocational education, an equally strong need exists to make a clear distinction between vocational education and technical education.

Teacher Education

All of the publicly assisted institutions of higher education in Ohio offer programs in teacher education. At all institutions this field is a major undergraduate curriculum enrolling from 25 to as many as 50 percent of undergraduate students. The principal undergraduate curricula are in elementary school teaching and secondary school teaching. At the graduate level in particular, further work may be offered in guidance and counseling, special education, and school administration.

Probably no area in the field of higher education has been the subject of more inquiry or more criticism than that of teacher education.[2] Together with the work of the public schools themselves, teacher education has been examined and re-examined until it is almost impossible to add further factual data or reasonable comment. In Ohio there has been a series of official inquiries and of reports on the subject.[3]

The first general problem in teacher education is that of curriculum construction. It is widely agreed that a teacher education curriculum should consist of three component parts: general education, subject matter education, and professional education. General education consists of those courses mentioned earlier, often prescribed on a university-wide basis for all undergraduate students. Subject matter education usually means a concentration of courses in a special area of teaching, such as English, a foreign language, history, physics, home economics, physical and health education, speech and hearing therapy, vocational education, etc. The purpose of this specialized education is to provide some depth of knowledge about a particular field of teaching. The elementary school teacher usually must be prepared to instruct the early grade school students in a variety of subject matter fields.

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[2] See, for example, James B. Conant, *The Education of American Teachers* (New York: McGraw-Hill Book Company, 1963).

[3] See, for example, the Staff Report No. 73, Legislative Service Commission, *Goals and Practices in Public Education* (February, 1965).

In the third place, there is the professional content as such in teacher education. The prospective school teacher needs to know something about educational psychology and evaluation of student learning. In addition, the school teacher should know something about the history and philosophy of education and about curriculum construction. To this is added actual intern experience in student teaching. The teacher education curriculum is controlled in part by teacher certification requirements. In almost all states one function of the state board of education is to approve the educational qualifications of a person to become a public school teacher. This involves the establishment of certain course standards and requirements which the prospective teacher must fulfill in order to obtain certification. In Ohio the standards prescribed by the State Board of Education are relatively liberal in comparison with those in some other states. The standard elementary education teaching certificate is issued on the basis of a minimum requirement of 42 quarter hours in professional education courses, with a minimum requirement of 90 quarter hours in general education (including arts and crafts, music, and physical education), and minimum requirements of 54 quarter hours in subject matter courses. These add to 186 quarter hours or an average of 15.5 hours of course credit per quarter. In semester hours the minimum requirements are 28 credit hours of professional education, 60 credit hours of general education, and 36 credit hours of subject matter education, a total of 124 credit hours. For secondary school certification the minimum requirements are 25.5 quarter hours (17 semester hours) in professional courses, 45 quarter hours (30 semester hours) in general education, and a variable number of credit hours in teaching fields from 15 quarter hours in bookkeeping to 67.5 quarter hours in science or social studies.

The consultants report that in many schools or colleges of education in the state-assisted institutions, faculties have added professional course requirements for a baccalaureate beyond the minimums fixed by the State Board of Education. It has been recommended to us that these professional course requirements should be carefully reviewed and that in many instances they might be revised downwards by the institutions concerned.

The consultants make a number of other criticisms of teacher education in Ohio. They say that there is too little research into problems of teacher education, that too little effort is given to the development of instructional materials, that the special problems of education for the culturally deprived have been largely ignored, and that student teaching has not been adequately organized or supervised.

Such criticism may be applicable in various degrees to various teacher education programs in different universities. These criticisms deserve careful attention by the faculties and administrative staffs of our state-assisted institutions.

Teacher Supply

There is a further problem which deserves some consideration. Estimates by the Ohio Department of Education indicate that enrollments in Ohio's elementary and secondary schools will continue to increase annually between 1964-65 and 1970-71. These enrollment increases will result in new demands for a larger number of qualified teaching personnel. Whereas there were 89,523 certificated personnel employed in Ohio during 1963-64, this number must be increased to 98,775 by 1970-71 in order to maintain the current pupil-teacher ratio of 24 to 1. Table 15 gives past data and makes projections showing

TABLE 15

Relationship Between Enrollment and Staff For All Ohio Elementary and Secondary Schools 1957-1970

Year	Enrollment Reported Oct. 10 Actual	Certificated Personnel Actual	Increased Personnel Needed Over Previous Year Actual
1957-1958	1,721,925	67,653	4,003
1958-1959	1,782,637	71,141	3,488
1959-1960	1,850,291	76,119	4,978
1960-1961	1,953,546	78,209	2,090
1961-1962	2,001,394	81,732	3,523
1962-1963	2,082,314	85,622	3,890
1963-1964	2,163,443	89,523	3,901
	Estimated	Estimated	Estimated
1964-1965	2,215,611	91,102	2,177
1965-1966	2,246,548	92,375	1,273
1966-1967	2,278,114	93,672	1,297
1967-1968	2,307,506	94,881	1,209
1968-1969	2,336,273	96,064	1,183
1969-1970	2,358,691	96,986	922
1970-1971	2,387,390	98,775	1,789

Source: Ohio Department of Education, *Teacher Certification in 1963*, Columbus, 1964.

annual changes in enrollment and teaching personnel for a period of 14 years. While Table 15 demonstrates that more teachers will be needed in Ohio with each succeeding year, it also reveals that Ohio already has reached a peak in its annual demand for teachers, and that for the foreseeable future the need for additional teachers will be less acute. Data prepared by the State Department of Education show that Ohio's colleges and universities supplied more teachers for the school system in 1963 than in any previous year. The number of Ohio education graduates for selected years between 1954 and 1963 is reported in Table 16. This table also reveals that state-assisted colleges have accounted annually for about 57 percent of all education graduates.

Without question, Ohio and the nation have been plagued with a shortage of teachers for many years. New factors are emerging, however, which indicate that the severe teacher shortage is coming to an end. Not only are more teaching degrees being awarded each year, but degrees in education as a percentage of all degrees awarded also is increasing. The National Education Association reports that between 1950 and 1962 teaching degrees as a percentage of all bachelor degrees had risen from 26.6 percent to 37.7 percent. In the light of these trends and also in view of the enormous higher education enrollment forecasts shown for the next 15 years, the number of graduates in education can be expected to climb steadily upward. These trends and projections for education degrees are particularly significant since the State Department of Education estimates that elementary and secondary school enrollments will increase by only 10 percent between 1963 and 1970. Despite the school enrollment pressures of the last 10 years in which the number of pupils increased by 52 percent, during this same time period the number of certified personnel rose by 70 percent.

Although the overall situation in regard to teacher supply is encouraging, this does not deny that there will continue to be shortages of teachers in specialized areas of instruction. There may be a shortage in science teachers and mathematics teachers. There will probably continue to be a shortage of teachers in vocational subjects. Moreover, many persons educated to become school teachers do not enter the profession or remain in the profession only a short time.

TABLE 16

Trends in Supply of Teachers from Ohio Colleges and Universities, 1954-1963

College or University	1954	%	1956	%	1958	%	1960	%	1962	%	1963	%
State Assisted												
Akron	173		192		260		260		205		209	
Bowling Green	432		596		649		670		705		892	
Central State	80		60		111		108		109		250	
Cincinnati	233		214		287		259		313		357	
Kent State	471		623		824		802		725		1,081	
Miami	394		411		579		585		515		478	
Ohio State	643		766		992		1,149		1,099		1,009	
Ohio University	380		561		701		769		607		452	
Toledo	134		126		171		205		223		265	
Subtotal— State Assisted	2,940	56.9	3,549	57.0	4,574	57.7	4,807	57.0	4,501	59.2	4,993	57.9
Private	2,230	43.1	2,674	43.0	3,348	42.3	3,633	43.0	3,101	40.8	3,626	42.1
Grand Total	5,170	100.0	6,223	100.0	7,922	100.0	8,440	100.0	7,602	100.0	8,619	100.0

Source: Ohio Department of Education, *Teacher Certification in 1963*, Columbus, 1964.

Nonetheless, it seems evident that the most pressing need relating to the education of teachers is in the improvement of the quality of the various college programs concerned with the preparation of teachers. With the prospect of an adequate supply of teachers, more attention now can be given to program improvements within colleges of education.

Business Administration

In recent years there has been a considerable discussion concerning the type of education which is desirable for business management. Much of this discussion was prompted by the publication in 1959 of two separate studies of business education, one sponsored by the Ford Foundation and the other by the Carnegie Corporation of New York.[4] A good deal of self-assessment about the program of business administration in collegiate schools of business has been going on in the past six years.

There are some who argue that business management is not a profession and that accordingly an educational program in preparation for a business career is futile. While this position is maintained with some vehemence by a few individuals, this point of view does not appear to be the prevailing one among business managers or university officials and faculty. A different proposition is that business management is an appropriate subject of educational specialization only at the graduate level and that the business student should have a liberal education before entering upon this graduate specialization. Those who maintain this position seldom indicate what kind of undergraduate specialization in the arts and sciences may be desirable for the prospective business student. Presumably, any specialization would be appropriate, whether in English, a foreign language, philosophy, art appreciation, one of the social sciences, chemistry, physics, geology, botany, zoology, or mathematics.

The consultants to the Board of Regents state that there continues to be a need for undergraduate education in business administration and that the state-assisted universities in Ohio should continue to provide such education. There are several fields of business management in which a student may specialize: accountancy, finance, marketing research or marketing management, personnel management, and production management. Sometimes a field of "general business" and the fields of secretarial study are added to this list. All of these subjects appear to have continuing importance for undergraduate professional education directed toward business management.

There has been some decline in the actual enrollment in so-called business "majors" in recent years at many of the state-assisted universities. This has been attributed to various possible causes: a declining student interest in business careers, an increased interest in undertaking business education only at the graduate level, and dissatisfaction with the quality of business management instruction. This last possibility should be cause for concern to administrators and faculty members in all state-assisted universities.

Two important suggestions have been put forward by consultants for improvement in the business administration program. One is that the educational effort in all specialized fields of interest should concentrate attention upon actual business decisions. This is a matter appropriately to be considered and resolved by business faculty members. Secondly, it has been pointed out that business management today demands an extensive understanding of economics, or national production and income accounts, of input-output relationships in the economy, of market economics, of natural economic policies as these may affect demand and supply and price stability in the economy, and of production resources (including education). It seems evident that management decision-making in business will necessarily be guided more and more in the future by economic factors of various kinds, and that the professional business manager will need to know as much about economics as the discipline is able to provide for the guidance of policy makers. This point of view likewise is one for appropriate faculty consideration.

Journalism

The consultants report that three state-assisted universities provide a journalism program offered through the formal organization of a school of journalism; these institutions are Kent, Ohio, and Ohio State. Other universities have departments of journalism or courses in journalism. About one-quarter of the total credit hours for a baccalaureate degree in journalism consists of specialized professional instruction. Some internship or other practical experience is also generally required. In all three schools students from other curricula are also enrolled. At Ohio State in particular special attention has been given to providing writing and editorial assistance in such fields of reporting as science, medicine, nursing, and dentistry. Another school of journalism gives special attention to providing assistance to high school newspaper and yearbook advisers.

The consultants advise that there is no need to provide any additional formal schools of journalism. They suggest that attention be concentrated upon improvements in the existing programs, including more emphasis upon subject matter fields of reporting. There is also a need for continued close working relationships with newspaper, radio, and television media. It has also been suggested that one of the schools, preferably the one at Ohio State, should provide a master's degree program in journalism.

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[4] Robert Aaron Gordon and James Edwin Howell, *Higher Education for Business* (New York: Columbia University Press, 1959); and Frank C. Pierson and others. *The Education of American Businessmen* (New York: McGraw-Hill Book Company, Inc., 1959).

Home Economics

Eight of Ohio's nine state-assisted universities in 1964-65 conferred degrees in home economics. The ninth institution, The Central State University, provides for a major in home economics as a part of teacher education.

Traditional views about the structure and objectives of the higher education home economics program have undergone extensive change. Preparation in home economics no longer necessarily leads to one of two goals: a professional career in school teaching or a non-professional career in homemaking. University catalogs now list a wide variety of career opportunities and fields of specialization for the home economics student. The home economics graduate can be prepared for employment in such fields as: food technology or dietetics, clothing design and textiles, home economics extension, and a variety of business related vocations including journalism, radio-television, fashion merchandising, and home planning and decoration.

The fact that home economics is in a state of transition in terms of its program and instructional emphasis is perhaps best reflected in the different organizational settings provided for home economics by Ohio's state-assisted universities. For example, home economics has major college status at The Ohio State University and The University of Cincinnati—the college of agriculture and home economics and the college of education and home economics, respectively. Other universities designate home economics as a department under the college of education or within the college of fine and professional arts. Home economics has also been established as a separate school in the college of education at The Ohio University.

The consultants recommend that Ohio's state assisted universities continue their efforts in reshaping and expanding the home economics curriculum in order adequately to prepare students for new employment opportunities in business and industry. While the preparation of persons to teach home economics will remain an important function, there are even more promising prospects for curriculum and instructional innovations in relatively new areas such as dietetics. For this reason, universities which place home economics as a department under the college of education should consider the desirability of an organizational scheme making home economics a less integral part of the college of education.

Fine Arts

All of the state-assisted universities provide some type of program at the undergraduate level in drama, art, and music. In some instances these programs have been developed in conjunction with the programs of teacher education in order to advance the preparation of elementary and secondary school teachers to provide instruction in these fields. In other instances greater emphasis has been given to instruction for individual performance in these fields of artistic endeavor either for professional or community service careers. To some extent all the universities now embrace both instructional objectives.

It has been pointed out to the Board of Regents that there has been a problem in many of the public universities about the relative emphasis to be given to elementary and secondary teacher education as against education for individual competence as a performing artist. To some extent certain institutions have had to provide two different departments in art and music to meet these different emphases. This kind of situation can result in duplication of facilities and personnel or in under-utilization of available facilities and personnel. It has been suggested that each institution should examine its situation in this respect and make appropriate adjustments where needed.

Engineering Education

There are 12 institutions of higher education in Ohio which offer one or more accredited programs in engineering education. One institution, the Air Force Institute of Technology, is operated by the federal government and should be viewed primarily as a national resource for air force engineers and scientists rather than as an educational resource for Ohio residents. Private engineering schools exist at Antioch, Case, Dayton, Ohio Northern, and Youngstown. Engineering programs in state-assisted institutions exist at Akron, Cincinnati, Cleveland State, Ohio, Ohio State and Toledo. Fenn College was a private institution in 1964 but turned its property over to Cleveland State in 1965. Table 17 gives some indication of the division of engineering enrollments between private and state-assisted universities and colleges in Ohio. In the autumn of 1964 nearly two-thirds of the total engineering enrollments were accommodated by state-assisted institutions. This percentage was fairly consistent at each degree level of enrollment. In terms of degrees granted, the state-assisted institutions in 1964 provided 56 percent at the baccalaureate level, 43 percent at the master's level, and 53 percent at the doctoral level.

TABLE 17

Engineering Enrollment and Degrees in Ohio by Grade Level
1964

	ENROLLMENT				DEGREES			
	B. S.	M. S.	Ph.D	Total	B. S.	M. S	Ph.D.	Total
Federal								
Air Force Inst. of Tech.	108	442		550	41	216		257
Subtotal	108	442		550	41	216		257
Percent of Total	.8%	19.3%		3.4%	2.8%	40.0%		12.5%
Private								
Antioch	37			37	8			8
Case	869*	325	182	1,376	183	90	31	304
Fenn	1,373			1,373	138			138
Ohio Northern	250			250	35			35
Dayton	1,078	68		1,146	127			127
Youngstown	1,306			1,306	103			103
Subtotal	4,913	393	182	5,488	594	90	31	715
Percent of Total	36.4%	17.2%	34.4%	33.6%	41.2%	16.7%	44.3%	34.9%
State-Assisted								
Ohio State	3,025	619	287	3,931	263	123	38	424
Ohio University	927	28		955	130	14		144
Akron	579	177		756	54	28		82
Cincinnati	2,804	442	60	3,306	256	41	1	298
Toledo	1,149	185		1,334	103	28		131
Subtotal	8,484	1,451	347	10,282	806	234	39	1,079
Percent of Total	12.8%	63.5%	65.6%	63.0%	56.0%	43.3%	55.7%	52.6%
Grand Total	13,505	2,286	529	16,320	1,441	540	70	2,051

* Includes an estimate of 200 students to compensate for freshman engineering enrollments not reported by Case Institute of Technology.

Source: U. S. Office of Education, *Engineering Degrees* (1963-64) *and Enrollments* (Fall, 1964), Washington, D. C. August, 1965.

Statistical data prepared by the U. S. Office of Education indicate that 20 different engineering curricular programs are offered in Ohio. Approximately 75 percent of all engineering enrollments are in the fields of electrical, mechanical, civil, chemical, industrial, metallurgical, and aeronautical engineering. Engineering enrollments in the United States reached a peak of nearly 300,000 students in the autumn of 1957, but for several years following 1957 declined. In the autumn of 1961 engineering enrollments began to show an annual increase again and by the autumn of 1964 these enrollments had climbed to nearly 300,000 again after reaching a low of 271,000 in 1960.

The engineering enrollment experience in Ohio has paralleled these national trends. The highest engineering enrollment figure in Ohio was that of 17,675 students in the autumn of 1957. One year later enrollments fell to 16,000 and by 1961 this figure had been further reduced to 14,850 (See Table 18). In 1962 Ohio's engineering enrollments began to move upward again, reaching the post-1958 high of over 17,000 students in the autumn of 1965.

Even though engineering enrollments are apparently beginning to turn upward both in Ohio and throughout the United States after several years of decline, engineering enrollments as a percent of total enrollments in higher education have been falling for nearly 10 years. This reduc-

TABLE 18

Engineering Enrollments in Ohio by Degree Level
1954-1964

Year	B.S.	M.S.	Ph.D.	Total
1954	11,955	1,058	182	13,195
1955	13,468	942	166	14,576
1956	15,790	1,244	166	17,200
1957	16,029	1,441	205	17,675
1958	14,316	1,499	207	16,022
1959	14,404	1,573	254	16,231
1960	14,207	1,725	321	16,253
1961	13,064	1,449	337	14,850
1962	13,325*	1,773	383	15,481
1963	13,618*	2,282	477	16,377
1964	13,505*	2,286	529	16,320

Engineering Enrollments in Ohio by Degree Level
As a Percent of Engineering Enrollments in the United States
1954-1964

Year	B.S.	M.S.	Ph.D.	Total
1954	6.2%	6.1%	5.5%	6.2%
1955	6.1	5.0	5.2	6.0
1956	6.3	5.5	4.9	6.2
1957	6.0	6.0	4.9	5.9
1958	5.6	5.3	4.3	5.5
1959	5.9	5.3	4.5	5.8
1960	6.1	5.5	5.0	6.0
1961	5.6	4.4	4.3	5.4
1962	5.8	5.0	4.1	5.6
1963	5.9	5.9	4.3	5.8
1964	5.5	5.4	4.2	5.5

*Includes an estimate of 175 students for 1962-63 and 200 students for 1964 to compensate for freshmen engineering enrollments not reported by Case Institute of Technology.

Source: U. S. Office of Education, *Engineering Enrollments and Degrees* (1955 to 1961) and *Engineering Degrees (1963-64) and Enrollments* (Fall, 1964), Washington, D. C., American Society for Engineering Education, *Journal of Engineering Education* (February, 1962 to 1964), Danville, Illinois.

tion has taken place despite forecasts by a number of authorities indicating that there will be a strong demand for engineering graduates during the '60's and '70's. In the light of the predictions concerning the future technological needs of this country, the numerical increase in engineering enrollments which began in Ohio and the United States in 1962 can be expected to continue in the foreseeable future.

Numerous ideas have been advanced to explain the reasons for declining enrollments. For example, some authorities suggest that the increased reliance upon technicians in this country has reduced the need for engineers. Other persons have indicated that many people who are trained today as scientists perform roles which were formerly viewed as primarily the responsibility of the engineer. In addition, there is an indication that engineers are used far more efficiently now than ever before. There is also some feeling that periodic news media stories about an overabundance of engineers have dampened the enthusiasm for many students considering a career in engineering. Whatever the reason, the fact is that most engineering schools have the capacity to accommodate a greater number of engineering students than is currently enrolled.

While total engineering enrollments in Ohio have generally been falling for a number of years, this decline has been reflected primarily at the baccalaureate level (See Table 18). Beginning in the fall of 1955, enrollments in the master's and doctor's degree engineering programs have been rising steadily each year with but one exception. During the last 10 years in Ohio, engineering enrollments in the master's programs have more than doubled; and the enrollment growth rate in the doctoral programs has even outpaced the experience in the master's programs. Thus, there has been an annual increase over the last 10 years of more than 10 percent for both the number of master's and doctor's degree candidates, while the baccalaureate programs show an annual increase for this period of less than two percent.

In 1954 Ohio accounted for 6.2 percent of total engineering enrollments in the United States, while in 1964 this percentage was 5.5. It is difficult to state categorically what contribution Ohio should make in regard to the total engineering education effort in the United States. If the index of Ohio's percentage of the total United States population is used as a guide, Ohio's enrollment effort in engineering equals this figure. Recent statistics show that Ohio accounts for 5.5 percent of the total United States population. The comparable percentage for engineering enrollments in Ohio reveals that Ohio has exceeded this population percentage in eight out of the last 11 years. The reason that Ohio has made such a good showing in total engineering enrollment is because of the large number of students enrolled at the baccalaureate level in engineering. Even though enrollments in the master's and doctor's degree programs have been increasing at a rapid rate, Ohio's percentage of graduate engineering students falls short of what might be expected when compared to the population index. This is particularly evident in regard to doctoral degrees. In 1964 Ohio's doctoral engineering enrollments accounted for only 4.2 percent of the national effort. Enrollment data for the engineering master's degree program is misleading for Ohio, since this figure includes a large number of persons who are enrolled at the Air Force Institute of Technology. For example, in 1964 this institute contributed one-fifth of all such enrollment at the master's level in Ohio. Excluding the Air Force Institute of Technology, engineering enrollments in Ohio at the master's level in the autumn of 1964 amounted to only 4.4 percent of the national total. Thus, Ohio's graduate enrollments in engineering fall considerably short of the national index of 5.5 percent in almost every one of the preceding 10 years.

Engineering degrees awarded in Ohio follow similar distribution patterns as shown for engineering enrollments. On an overall basis, Ohio does not award as many degrees at any of the three degree levels in engineering as might be expected on the basis of the population index (See Table 19). The difference in percentages be-

TABLE 19

Engineering Degrees Awarded in Ohio
1954-1964

Year (Fall)	B.S.	M.S.	Ph.D.	Total
1954	1,016	174	27	1,217
1955	892	138	22	1,052
1956	986	147	22	1,155
1957	1,193	213	21	1,427
1958	1,350	233	30	1,613
1959	1,532	286	28	1,846
1960	1,534	295	31	1,860
1961	1,525	331	31	1,887
1962	1,428	393	65	1,886
1963	1,389	392	67	1,848
1964	1,441	540	70	2,051

Engineering Degrees Awarded in Ohio as a Percent of Engineering Degrees Awarded in the United States
1953-54—1962-64

Year Ending	B.S.	M.S.	Ph.D.	Total
1954	4.6%	4.2%	4.6%	4.5%
1955	3.9	3.1	3.7	3.8
1956	3.7	3.1	3.6	3.7
1957	3.8	4.1	3.5	3.9
1958	3.8	4.0	4.6	3.9
1959	4.0	4.2	3.9	4.0
1960	4.1	4.1	4.0	4.1
1961	4.3	4.1	3.3	4.2
1962	4.1	4.4	5.4	4.2
1963	4.2	4.1	4.9	4.2
1964	4.1	5.0	4.1	4.3

Source: U. S. Office of Education, *Engineering Enrollments and Degrees* (1955-1961), Washington, D. C., American Society for Engineering Education, *Journal of Engineering Education* (February, 1962-1964), Danville, Illinois.

tween enrollment in engineering and degrees awarded in engineering for Ohio indicates that retention of students is a major problem for the engineering colleges. Although the problem of retention is one which confronts all engineering schools in the United States, the statistical data shown here indicate that it is of particular concern in Ohio.

The statistical data reviewed here indicate that the state's engineering schools are not confronted with the enrollment crisis which applies to higher education generally.

Based upon past enrollment experience, the consultants state that Ohio's public and private engineering schools have sufficient existing capacity to accommodate enrollment expansion during the present decade. Conversations with various authorities in Ohio in engineering education confirm this conclusion that enrollments can be expanded sizably with existing facilities. The question of the adequacy of facilities to meet engineering enrollment demands must be reviewed periodically in the light of national projections of engineering needs during the next 10 to 15 years. Since Ohio and the country have experienced wide fluctuations in engineering enrollments during the last decade, enrollment data for the next few years will have to be examined closely in order to be certain that Ohio's engineering schools continue to have sufficient enrollment capacity.

The major problem which currently confronts Ohio's engineering schools appears to be one of quality and not of quantity. This concern with quality applies to all levels of engineering education, but it is especially important at the graduate level. In addition, it will be necessary to continue to increase the number of students who are enrolled in and who earn degrees from graduate engineering education programs. This increased emphasis concerning graduate engineering education reflects a basic change which has taken place in the structure of engineering education. Graduate education must receive increasingly greater attention because of the need to prepare persons to serve as engineering instructors and professors and also to meet the highly advanced technological manpower requirements of industry and government. Technological changes have occurred so rapidly that in many instances the first four to five years of an engineering program can no longer provide the prospective engineer with ample preparation in a specialized field. In engineering schools throughout the country, the master's and doctor's degree programs have become increasingly important, particularly from the standpoint of specialization and research. Finally, the importance of graduate education has been magnified further by the needs of science and industry for the continuing education of their professional personnel. If Ohio industry is to keep pace with technological change, persons employed currently as engineers must have access to strong graduate education programs.

The consultants have been critical of the quality and of certain other aspects of engineering education. The desirability of a five-year undergraduate curriculum in place of a four-year curriculum has been questioned. The possibility of a four-year, non-cooperative engineering curriculum in addition to a cooperative arrangement has also been suggested. According to our consultants, the volume of research activity undertaken by engineering faculties is low. The teaching load for faculty in engineering is moderately heavy, but class sizes tend to be smaller than necessary in many instances. The admission standards in state-assisted institutions for the engineering curricula are criticized as being too low, except at The University of Cincinnati. The result is a high attrition rate and even high cost in conducting engineering courses. The consultants report that at Stanford University expenditure analysis has indicated that engineering curricula do not need to be more expensive than other curricula under optimum conditions of class size and careful construction of course offerings. The cost data for direct instruction given by our consultants are shown in the accompanying tables.

Above all else, the consultants stress the importance of concerted efforts to improve the quality of undergraduate instruction in engineering and to expand the volume and quality of graduate instruction. The need for improved facilities has been emphasized. It has also been suggested that expansion of evening programs be handled carefully while encouragement is given to the build-up of full-time day-time enrollments.

Architecture

There are five accredited five-year undergraduate programs in architecture in Ohio, all of which are located in state-assisted universities

(Cincinnati, Kent State, Miami, Ohio and Ohio State). The graduates in Ohio amount to about one-tenth of all architectural degrees conferred in a year in the United States. In this field the state produces more graduates than its proportion of population to total population of the United States. The consultants report shortages of instructional space in certain institutions, and that enrollment cannot expand without additional facilities.

The consultants advise that the architectural programs at Ohio and Kent State are small but seem to be making progress. The Ohio State University offers programs in architecture, landscape architecture, and city planning. Graduates are much in demand and in general the program appears to be satisfactory. At The University of Cincinnati, which has the largest enrollment, architecture students are enrolled on a cooperative basis, spending six months in study and six months in architectural employment. A period of six years is required in order to complete the baccalaureate program. Architecture and city planning are offered. The program at The Miami University emphasizes architecture, although some work has been offered in city planning. This program is also small but appears to be of high quality.

The consultants state that there is no need for additional architectural programs in Ohio at the present time.

Agriculture

There is only one undergraduate program in agriculture in Ohio, and that is provided by The Ohio State University. Instruction in agriculture, with its twin counterparts of agricultural research and agricultural extension, is usually given considerable credit for the remarkable productivity of American agriculture. The nature of the farm enterprise today is undergoing great change in the United States. The farm population is declining; farm science is advancing our knowledge about plant and animal genetics and is helping to overcome the limitations of plant and animal pathology. In addition, farm production and animal care are becoming increasingly mechanized, and farm management is requiring substantial investment capital. At the same time, many business enterprises have arisen which are closely related to agriculture. These include seed production and distribution, fertilizer production and distribution, and farm equipment production and distribution. In addition, activities in food processing and distribution to consumers have become major business enterprises. Much attention in the horticultural and tree business is now directed to the urban dweller who owns his own home, as well as to the many public officials concerned with maintaining flowers, shrubs, trees, and grass in parks, recreational areas, along highways, and on public malls. To some extent instruction in agriculture is related to all of these diverse business and professional interests. It is no longer possible to think of the farmer or the farm as the principal beneficiary of agricultural education.

Various groups have advised the Board of Regents that there is a need for The Ohio State University to reexamine carefully all phases of its educational program and instructional organization relating to agriculture. It has been suggested that some of the requirements of agriculturally related business enterprises for educated personnel might be met by the development of a two-year instructional program in two or three different agricultural technologies. This seems to be an idea worth exploring in Ohio. The state should continue to be innovative in the adaptation and improvement of instruction in agriculture to meet the changing circumstances of the agricultural sector of the American economy.

Nursing Education

Three different kinds of nursing education programs enable a person to obtain preparation to become a registered nurse. These programs are: (1) the diploma or hospital program, (2) the university baccalureate program, and (3) the two-year college associate degree program. Since the diploma programs are administered by individual hospitals independent of the public system of higher education, observations here about nursing education primarily involve considerations affecting the programs of higher education institutions.

Historically, the hospital and baccalaureate programs have been the only sources for the education of nurses in Ohio. Diploma programs are offered by 51 hospital schools. Within the last two years, however, associate nursing degree programs have been initiated by The Cuyahoga Community College and The Lorain County Community College. The baccalaureate nursing programs of four private institutions and two public institutions are accredited by the National

League for Nursing: Capital University, College of Mount St. Joseph, St. John College of Cleveland, Western Reserve University, The Ohio State University, and The University of Cincinnati.

The needs of nursing education were examined for the Board of Regents by means of an exceptionally valuable study entitled *Projected Needs for Nursing Education in Ohio.*[5] This study was submitted as a report to the Board by a joint committee of the Nursing Education Section of the Ohio College Association; the Educational Administrators, Consultants, and Teachers Section of the Ohio State Nurses Association; and the Division of Nursing Education of the Ohio League for Nursing. The study presents an extensive analysis of both the quantitative and qualitative needs of nursing education in Ohio.

Although Ohio unquestionably has a shortage of registered nurses, the situation has been improving in regard to the number of nurses per 100,000 population. Between 1957 and 1963 the number of nurses in Ohio per 100,000 population increased from 260 to 288. Ohio currently ranks about midway among the 50 states according to this index. If new nursing enrollments and graduations continue at the same 1963 level or rate for the next 12 years, the number of nurses in Ohio should increase to 323 per 100,000 population by 1975. Even though the past and projected gains in the number of nurses seem encouraging, this optimism probably should be tempered by a recommendation of the National League for Nursing that "the nation should set a goal of 350 nurses per 100,000 population by 1970, if it wishes to achieve desirable levels of health care".[6]

The two accompanying tables present a detailed analysis estimating the annual number of nurses to enter the profession between 1963 and 1975, and identifying the institutional source of education for Ohio's nurses during the past 12 years. Table 21 clearly reveals that the diploma program under hospital auspices is by far the largest source for the education of nurses. For the year ending June 1, 1964, hospitals accounted for 86 percent of all nursing graduates; the university baccalaureate program produced only 325 graduates in 1964 or 14 percent of the total.

Although there is a tendency to refer to the critical shortage of nurses generally, Ohio's shortage would be much better described specifically as a failure substantially to increase the number of nurses graduating from programs of higher education. It is believed that strong en-

TABLE 20

Projected Estimates of Number of Nurses in Ohio, 1963-1975
if New Enrollments Continue at 1963 Rate and
69.17 Percent Graduate*

Year	Estimated Population	Active Nurses No.	Active Nurses Ratio per 100,000	Loss due to 5% attrition	Gain due to graduations	Net gain
1963	10,203,798	29,381	288	1,469	2,192	723
1964	10,453,553	30,084	287	1,504	2,295	791
1965	10,630,270	30,875	290	1,543	2,256	713
1966	10,805,234	31,588	292	1,579	2,126	547
1967	10,981,239	32,135	292	1,606	2,219	613
1968	11,157,336	32,748	293	1,637	2,426	789
1969	11,333,577	33,537	295	1,676	2,629	953
1970	11,510,163	34,490	299	1,724	2,849	1,125
1971	11,685,660	35,615	304	1,780	2,913	1,133
1972	11,861,497	36,748	309	1,837	2,920	1,083
1973	12,037,423	37,831	314	1,891	3,002	1,111
1974	12,213,438	38,942	318	1,947	3,086	1,139
1975	12,390,047	40,081	323		3,091	

Source: *Projected Needs for Nursing Education in Ohio*, page 44.

* 69.17 is rate of graduation in 1963.

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[5] Ohio State Nurses Association, *Projected Needs for Nursing Education in Ohio*, Columbus, Ohio, November, 1964.

[6] *Ibid.*, p. 20.

TABLE 21

Admissions and Graduations from All Basic Nursing Programs in Ohio, 1956-1964

Year ending June 1	ADMISSIONS			GRADUATIONS					
	College and University Control	Hospital Control	All Programs	College and University Control		Hospital Control		All Programs	
				No.	Percent	No.	Percent	No.	Percent
1953	381	2,307	2,688						
1954	354	2,222	2,576						
1955	395	2,385	2,780						
1956	398	2,416	2,814	205	53.80	1,507	62.32	1,712	63.69
1957	390	2,445	2,835	268	75.70	1,518	68.31	1,768	68.63
1958	184*	2,307	2,491	256	64.81	1,653	69.30	1,909	68.66
1959	306	2,571	2,877	257	64.57	1,650	68.29	1,907	67.76
1960	370	2,799	3,169	267	68.46	1,704	69.69	1,971	69.52
1961	430	2,888	3,318	263	*	1,569	68.01	1,832	*
1962	429	2,833	3,262	228	74.50	1,718	66.82	1,946	67.63
1963	398	2,677	3,075	265	71.62	1,927	68.84	2,192	69.17
1964	418	2,729	3,147	325	75.58	1,964	68.00	2,289	68.99

*Admission policy at Ohio State University changed in 1958 so there were no admissions that year; this makes percent of graduates in 1961 invalid for the college and university controlled programs and for all schools.

Source: *Projected Needs for Nursing Education in Ohio*, page 43.

couragement must be given to a public policy of higher education designed to increase substantially the number of qualified college nursing graduates. Expansion of the baccalaureate nursing program is particularly important.

The baccalaureate nursing program is recognized as the most promising and reliable source for the preparation of persons for administrative and supervisory positions in nursing. A 1963 report by the Surgeon General's Consulting Group on Nursing indicated that the bachelor's degree in nursing should be the goal of educational preparation for head nursing positions and for team leaders. The report previously cited on Ohio's nursing education needs also observed that "there are many staff nurse situations in hospitals that require specialized skills most advantageously obtained through baccalaureate programs".[7] In addition, the baccalaureate program must serve as the educational foundation for further preparation at the graduate level for master's and doctoral degree work.

In order to meet the need for additional baccalaureate programs, it has been recommended to the Board of Regents that three such programs be initiated in Ohio. It appears that programs should be established in three geographic areas of the state: the northwest, the northeast, and the southeast. Any new baccalaureate program should be developed with caution to insure that the needs of the program for clinical facilities and for instructional staff will be met. New baccalaureate programs can only be established through the development of a qualified instructional staff in nursing education. It will also be necessary to observe the requirements of the State Board of Nursing Education and Nurse Registration, as well as the accreditation standards of the National League of Nursing in the establishment of any new higher education nursing program.

It has also been recommended that as many as four to six new associate degree nursing programs should be established in Ohio. These programs can be offered by community colleges, university branches, and technical institutes. The location and organizational pattern of these new two-year programs will depend in large part upon specific community interests and needs. In any event, standards of the Board of Regents for approval of the associate degree in nursing will apply uniformly to all institutions of higher education. Expansion of the associate degree nursing program will make a meaningful contribution in meeting a particular segment of the state's overall nursing needs.

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[7] *Ibid.*, p. 23

CHAPTER 4
SPECIAL PROFESSIONAL PROGRAMS

Professional fields of study may be pursued by a student often at three different levels: the baccalaureate, the master's degree level, and the doctoral degree level. In the preceding chapter a number of professional fields of study have been mentioned, and in almost all of these fields graduate degrees at the master's and doctoral level may be obtained in addition to a bachelor's degree.

There are certain professional fields of study which require special mention. Some of these fields might properly be labelled graduate professional programs. This would be appropriate, for example, in law and medicine. Others of these fields require two or more years of pre-professional education although not necessarily a baccalaureate as a prerequisite to admission in the professional program.

The special professional programs to be considered here include optometry, pharmacy, veterinary medicine, social work, library science, law, dentistry, and medicine. The consultants to the Board of Regents have reviewed these programs in terms of their adequacy to meet state needs for educated persons in these fields and in terms of academic quality as offered at each state-assisted institution.

It may be useful to insert a few words at this point about professional education in general in relation to higher education. These observations are by no means limited to the particular professional fields of study mentioned in this chapter but are equally applicable to all professions and all professional study.

A profession as commonly recognized in the United States is closely related to higher education. It may be said that a profession is a specialized activity requiring higher education as a preparation and that any specialized activity of higher education prepares an individual to practice a profession. A profession is ordinarily differentiated from a vocation by the requirement of higher education as the educational prerequisite, and in turn the specializations of knowledge and practice recognized by higher education are usually accepted as professions in American society.

A profession is a specialized activity practiced by individual men and women and requiring highly developed knowledge and skill based upon higher education and experience. A profession is practiced for the benefit of society in accordance with a defined code of ethics set forth by the profession. In accordance with this definition of a profession, it is obvious that education must be closely related to practice, that professional schools must benefit from and have the assistance of professional practitioners, and that professions depend heavily for the quality and adequacy of their service to society upon the quality and adequacy of graduates from the professional programs of higher education.

Optometry

The only school of optometry in Ohio is the one at The Ohio State University. Admission is based upon a two-year pre-professional curriculum. The program is of four years' duration and culminates in award of the degree of Doctor of Optometry. The curriculum emphasizes course work in ocular anatomy, ocular pathology, physiological optics, illumination, geometric and mechanical optics, and optometric methods. The educational program requires clinical experience in refraction, vision training, and visual fields study.

There are only ten schools of optometry in the United States which are accredited by the Council on Optometric Education of the American Optometric Association. The Ohio State program is so accredited. There is a need to increase the enrollment somewhat in optometry education in order to help meet the requirements of the American people for improved vision. The consultants advise that there does not appear to be a need for any additional school of optometry in Ohio, rather, the one existing school might be expanded somewhat.

Pharmacy

There are four schools of pharmacy in Ohio, of which one is located in a private university, two in municipal universities, and one in a state university. The pharmacy school at The University of Cincinnati is the largest, with nearly 300 students. The pharmacy school at The Ohio State University has a extensive program beyond the first professional degree and a considerable research program. Pharmacy education requires three years for a baccalaureate in addition to two years of pre-professional educational preparation.

The consultants state that Ohio had four of the 76 accredited schools of pharmacy in the United States as of 1964, but they suggest that enrollment in these schools might well be somewhat larger. The number of pharmacists in Ohio per 100,000 population is somewhat lower than the national average. Existing schools have the capacity to accommodate more students.

The consultants observe that pharmacy education faces a critical issue of future direction. The need for the pharmacist in a local drugstore is declining, since most drugs are now compounded by pharmaceutical companies. Only about 10 or 15 percent of all drugs now dispensed to the public are compounded by a local pharmacist. A substantial number of pharmacy graduates enter drugstores and many become drugstore managers or owners. In this capacity they tend to need a professional business education as much as that of a professional pharmacy education. There is a growing demand for pharmacists in hospitals and in the pharmaceutical industry. Moreover, there is some consideration now being given to a possible shift of the drug dispensing business to a local health center. Pharmacy education confronts a very real problem of adjustment to changing conditions.

Another major educational need at present, the consultants suggest, is for the existing pharmacy schools to develop closer instructional relationships with education in nursing, dentistry, and medicine.

Veterinary Medicine

The College of Veterinary Medicine at The Ohio State University is the only such school in Ohio. Admission is based upon two years of pre-professional educational preparation, and the curriculum requires four years of professional education in order for the student to qualify for the degree of Doctor of Veterinary Medicine. The school at Ohio State admits 80 students a year, is the third oldest school in the country, and is the largest among 18 accredited veterinary schools in the United States. The consultants advise that the demand for veterinary doctors is increasing.

The College of Veterinary Medicine at Ohio State has been hampered in the past by the lack of adequate instructional and clinical facilities. A new building is now being planned for construction, and a temporary clinical facility has been provided until the permanent building can be completed. It is hoped that with new facilities the number of students admitted to the program can be increased. There is also a need, the consultants state, for closer working relations between the College of Veterinary Medicine and the Ohio Agricultural Research and Development Center in Wooster on research in animal pathology. The present staff of the college has a good record in research activity.

Social Work

There are two schools of social work in Ohio, one at a private university and one at The Ohio State University. The School of Social Work at Ohio State offers a baccalaureate and a master's degree program, in addition to work at the doctoral level. Admission to the baccalaureate program is based upon two years of pre-professional educational preparation. The principal professional program, however, is the two-year master's degree course of study. Because of the demand for social work education in the Cincinnati area, the School of Social Work has provided professional courses at a center located on the campus of The University of Cincinnati.

The staff of the Board of Regents has been in consultation with the advisory committee of the Ohio Youth Commission and with the organization of county juvenile judges. The staff has also consulted welfare officials in the state. All declare that there is a definite need for further facilities for a professional program at the graduate level in social work, especially for programs which would enroll students on a part-time basis. The major obstacle to expansion of social work education is a shortage of qualified personnel to teach in this field. We believe that a regular school of social work should be established, preferably at The University of Cincinnati as soon as facilities and arrangements for the program can be provided, and the possibility of one or two other additional programs should be considered at a later date.

Library Science

There are two accredited graduate programs of library science in Ohio, one located at a private university and the other at Kent State University. The consultants advise that the program at Kent State University needs strengthening in order to become a satisfactory graduate professional school in library science. The staff of the Board of

Regents has received numerous representations about a sizeable shortage in the number of qualified professional librarians available to meet the needs of college and university libraries in Ohio, municipal libraries, and various specialized libraries.

The consultants recommend that special attention be given immediately to strengthening the graduate professional program in library science at Kent State University, and that planning begin at once to establish a second graduate professional school in library science, preferably in Southwestern Ohio.

Law

There are nine schools of law in Ohio, five operated under private auspices and four operated by state-assisted institutions of higher education (Akron, Cincinnati, Ohio State, and Toledo). Under a ruling of the Ohio Supreme Court setting standards for admission to the bar, the law schools require a baccalaureate as a condition for entrance.

The consultants advise that the nine law schools in Ohio are adequate to meet the needs of the profession. There are only 10 law schools in New York, 11 in California, 7 in Illinois, and 6 in Pennsylvania.

Of the four law schools in state-assisted institutions, two began as evening law schools serving primarily a part-time local clientele. These law schools at Akron and Toledo are now admitting full-time day-time students or will be doing so as of 1966-67. The consultants state that evening law schools, if their facilities are satisfactory and if desirable standards of instruction are maintained, have a valuable service to render. They declare, however, that it is uneconomical for an evening program to operate in the same city as a day-time program but without relationship to the day program. The consultants also state it is desirable for law schools to be associated with established universities, with their libraries, their administrative services, their supporting faculties, and their concern for academic standards.

The consultants have provided detailed observations about each of the law schools operated by state assisted institutions. They compliment the law school at Ohio State on its plans to expand to 750 students, its new building, and its excellent library. The consultants note that the faculty has engaged in considerable research and contributes numerous articles to legal publications. They suggest that a major need is for higher faculty salaries.

The consultants note that the law school at Toledo began day-time instruction in September, 1963, and that enrollment has shown a satisfactory growth. The evening program is satisfactory and plans have been made to provide the school with additional space. The law school at Cincinnati has experienced some enrollment loss which more recently has been reversed. A new addition has been added to the law building. The law school at Akron will begin day-time operation in 1966: a new building was completed in 1965.

There is some criticism of the lack of desirable levels of financial support for legal education in state-assisted institutions and the absence of desirable arrangements for legal education beyond the three-year basic program.

Public Administration

There does not exist in Ohio a professional school of public administration in any state-assisted institution of higher education. Substantial need would appear to exist for such a program to prepare students for public service at all levels. Necessary interest and resources would appear to exist at The Ohio State University for establishment of such a professional program, and its location near the centers of state government would facilitate worthwhile interrelationships between the program and the state government. It would be in the best interest of effective public service for The Ohio State University to consider establishment of a professional school of public administration.

Dentistry

There are only two schools of dentistry in Ohio, one in a private university (Western Reserve University) and one at The Ohio State University. The College of Dentistry at Ohio State offers a four-year curriculum leading to the degree of Doctor of Dental Surgery. Admission is based upon the requirement of two years of pre-professional educational preparation, but many of the students admitted have had three or even four years of undergraduate education. The College also offers a program in dental hygiene leading to a certificate of Graduate Dental Hygienist. This curriculum is of two years' duration and is open only to women. Students may be admitted to the program directly from high school or after one year of college education. The College of Dentistry admits 150 students a year to the dental curriculum, but it is planned to increase this number to 200 as soon as facilities permit.

The consultants state that more work in dentistry research at Ohio State would be desirable and would strengthen the program. They also assert that increased collaboration between the College of Denistry and the College of Medicine would be beneficial. The present continuing education program in dentistry is said to be quite good.

There has been some discussion in Ohio about the desirability of a third school or college of dentistry. There was at one time a college of dentistry in Cincinnati, but this has been disbanded. Representations have been made to the Board of Regents by the Public Health Federation of Southwestern Ohio concerning the need for a third dental school. It is said that the Cincinnati-Dayton area has the lowest ratio of dentists per 100,000 population of any of the major metropolitan areas in the state, and that clinical dental care is inadequate. This evidence seems to suggest that another dental school is needed and that it should be located in Cincinnati. It is proposed in the Master Plan that this subject should be given further consideration and that a new dental school, if needed, might be established in cooperation with The University of Cincinnati.

Medical Education

In October, 1959, the U.S. Public Health Service published the Report of the Surgeon General's Consultant Group on Medical Education, popularly known as the Bane Committee, entitled *Physicians For A Growing America*. This consultant group found that as of 1958 there were 235,000 doctors of medicine in the United States in active practice and that this was a ratio of 133 doctors per 100,000 population. If this ratio of doctors per 100,000 population were to be maintained in 1975—and the consultant group considered this to be a minimum requirement—there would have to be 330,000 praticing doctors by that time. To achieve a doctor supply of 330,000 persons would require the graduation of 11,000 students a year, compared with the 7,500 graduates of 1959 and with the some 8,000 which were then expected as of 1968. The conclusion of the consultant group about the needs of medical education was emphatic. It declared: ". . . the present medical school facilities must be increased substantially and new schools must be established." The report added: "This expansion must be undertaken at once. Delay will only magnify the problem."

The Bane Committee indicated that Ohio was a state with a need for substantial additional first-year places for medical students. From an entering capacity of 325 students, it was proposed that Ohio should provide opportunity for 592 first-year medical students.

Senate Bill No. 211 of the 103rd General Assembly in 1959 authorized a "survey of current medical education, including the necessity and desirability of establishing additional state medical colleges in the State of Ohio." In the spring of 1960 responsibility for this survey was assigned by Governor DiSalle to the Interim Commission on Education Beyond the High School, which had also been created by the 103rd General Assembly. This Commission was composed of two state senators and one state representative, three college and university presidents (two private and one public), two citizens, and one state government official.

The Interim Commission in 1960 retained a medical education consultant to make the desired survey in Ohio. This consultant was Dr. John W. Patterson, Vice-Chancellor for Medical Affairs at Vanderbilt University and Dean of the School of Medicine there. In turn, Dr. Patterson associated two other medical deans with him in his study: Dr. Gordon H. Scott, Dean and Vice-President for Medical College Development at Wayne State University, and Dr. John B. Truslow, Executive Dean and Director of the University of Texas School of Medicine in Galveston.

Dr. Patterson presented his survey report to the Interim Commission on January 15, 1962. He then arranged for his medical education panel to review this survey, to visit the three medical schools in Ohio, and to hold hearings in other parts of the state to consider the desirable location of a new medical school.

In his survey report, Dr. Patterson based his findings of inadequate capacity in Ohio's three medical schools upon the data of the Bane Committee. He pointed to the need for two new medical schools in Ohio by 1975. He fixed 583 medical school graduates as the desirable number in that year, whereas in 1960 Ohio's schools graduated 309 doctors. He proposed an increase in number of graduates by 274. He argued that as one of the top five or six states in the United States in terms of wealth, the State of Ohio was not doing its proper share in meeting the economic cost of medical education. In Ohio there were 15 medical school students per billion dollars of personal income, while there were 23 in Wisconsin, 22 in Illinois, 19 in Indiana, and 18 in Michigan; the average for the United States was 21 medical school students per billion dollars of personal income.

Dr. Patterson recommended immediate action to create one new medical school in Ohio, improvement in the facilities for medical education at The Ohio State University, and some expansion of the entering capacity at the medical school of The University of Cincinnati. Insofar as location of a new medical school was concerned, Dr. Patterson proposed three criteria: an urban community providing an adequate patient load for clinical study, community support, and a university base.

In December, 1962, the Interim Commission on Education Beyond the High School issued its report upon the basis of the Patterson survey and of the panel hearings in four cities. The Commission itself held two days of hearings in Columbus in September, 1962. The Interim Commission recommended first that priority in the expenditure of capital funds by the State of Ohio go to improvement of the facilities of the College of Medicine at The Ohio State University. Secondly, the Interim Commission recommended immediate steps to create a new medical school in conjunction with The University of Toledo. Thirdly, the Interim Commission recommended immediate negotiations with The University of Cincinnati to increase the size of its freshman class in the College of Medicine.

The Board of Regents asked its educational consultants to expedite the medical education part of their master plan survey. On September 10, 1964, the Board of Regents received a special report on medical education from the Academy for Educational Development. This report was prepared by Dr. Kenneth Penrod, Vice President for Medical Affairs at the University of West Virginia. Our consultants urged immediate action to create a new medical school and recommended that its location should be in the City of Toledo. The Board of Regents on September 11, 1964, addressed formal recommendations to Governor Rhodes proposing: (1) immediate attention to the facility problems of the medical program at The Ohio State University, including expansion of the entering class from 150 to 200 students, (2) legislation to establish a new state college of medicine at Toledo, and (3) further study of the needs for additional medical school expansion in Ohio. These recommendations resulted in the release of funds to The Ohio State University for planning improved basic and clinical science facilities. Amended House Bill No. 7 of the Special Session of the 105th General Assembly, approved December 18, 1964, created a Toledo State College of Medicine.

The consultants also recommended that some consideration be given to the possibility of enlarging the entering class at the medical school of The University of Cincinnati. It has been found that the faculty and administration of the University are interested in the possibility of enlarging the entering class from 100 to 125 students, and that they might be willing to consider the possibility of an increase to 150 students. Such as increase in the number of entering students will require additional facilities and operating support.

It seems highly desirable that plans be made for the expansion of the number of medical students at The University of Cincinnati. At some later stage further consideration must be given to the problem of the need for still more increase in the capacity for medical education in Ohio.

CHAPTER 5

GRADUATE STUDY AND RESEARCH

Graduate study is generally conducted on two different levels of instruction beyond the baccalaureate: the master's degree level and the doctoral degree level. The degree of Master of Arts, Master of Science, or Master in a designated professional field (architecture, fine arts, music, business administration, education, and other specialization) is usually awarded for one academic year (two or three semesters or three or four quarters) of study beyond a first bachelor's or professional degree. In some instances, a master's program may be extended to two years, and in the field of teacher education there has been a post-master's degree program of one year leading to a certificate of specialist in education.

The doctoral degree—whether Doctor of Philosophy, Doctor of Education, Doctor of Business Administration, or some other designation—has usually required two years (four semesters or six quarters) of class and intensive reading or laboratory work beyond the master's degree. Another year (two semesters or three quarters) may be devoted to the preparation of a dissertation or report in order to complete the requirements for the degree. The doctoral degree—with its equivalent graduate degree in medicine, law, theology, and dentistry—is ordinarily considered the culmination of the formal educational process for scholars and members of the learned professions.

There is a close correlation, especially today, between graduate study at the doctoral level and research. Universities which have faculty members active in research are the universities with faculty members especially competent to provide instruction at the doctoral level. Moreover, doctor's degrees in the disciplines are awarded only after the candidate has demonstrated his capacity to complete a basic research project employing accepted research techniques of the field. Doctor's degrees in the professional fields are awarded only after the candidate has demonstrated his capacity to complete an applied research project employing applied research techniques. Such basic or applied research can only be carried on where there are research facilities.

Moreover, in many fields of research such as in the biological sciences, the physical sciences, and engineering—and in other disciplines or professional fields as well—research today involves team or group activity rather than the effort of a single scholar. In these circumstances it is customary for a senior or well-known scholar to gather around him a group of younger persons who are graduate students. Sometimes research associates may be persons who have just completed their graduate study. In any event, faculty research on a team basis is difficult to carry out except where there is a graduate instructional program at the doctoral level as an integral part of the university operation.

Master's Programs

The most recently available statistics about the award of master's degrees by colleges and universities in Ohio have been presented in Table 14 in Chapter 3 above. As of 1963-64, there were 21 institutions in Ohio which awarded degrees at the master's level. This number included eight state-assisted universities. The fields in which these degrees were awarded are also shown in Table 14. In the order of the number of degrees awarded, these 21 institutions were:

Ohio State University	958
Kent State University	498
Western Reserve University	369
Xavier University	368
University of Cincinnati	340
Miami University	308
Ohio University	247
Bowling Green State University	227
University of Toledo	179
Case Institute of Technology	163
University of Akron	117
John Carroll University	86
Wittenberg University	40
Oberlin College	36
Athenaeum of Ohio	29
Hebrew Union College	29
St. John College	11
University of Dayton	11
Cleveland Institute of Music	7
Cleveland Marshall Law School	7
United Theological Seminary	1
	4,031

There appears to be a definite trend in the direction of more students enrolled in master's degree programs, especially in professional fields of study. Although the master's degree in the disciplines tends to be a kind of preparation or trial exercise for doctoral study, its usefulness for this purpose has by no means been exhausted but probably is increasing. Moreover, the graduate student who does not continue beyond the master's degree is likely to be in increasing demand for instruction of lower division students in higher education. Thus, there probably will be a need to expand the programs available for award of the master's degree.

The consultants who have inquired into professional education have all noted the growing interest given to study beyond the baccalaureate. There is a tendency to expect more and more elementary and secondary teachers to obtain a master's degree. The interest in obtaining a master's degree in business administration as a further qualification for professional business management appears to be expanding. Master's degree programs in architecture, agriculture, engineering, pharmacy, nursing, agricultural science, and other fields are more and more in demand.

There are some special problems in connection with arrangements for providing desired master's degree programs in teacher education and in business administration, the two fields which have accounted for about half of all master's degrees awarded in Ohio. The usual candidate for such a degree is already employed as a teacher or in business. This means that the graduate student in these fields must take the necessary course work in the late afternoon and evening. In the case of the elementary and secondary school teacher, there is opportunity for full-time study only in the summer. Even this option is not ordinarily available to the person working in a business enterprise. The largest number of persons interested in these graduate programs will be found in metropolitan areas where business enterprises are located and where the largest number of school teachers will be found. This means that some programs of graduate study at the master's degree level in teacher education and business administration must be arranged to meet the needs of persons living in urban areas who can study only part-time.

The state-assisted universities in Ohio in some instances are not properly located to meet these needs, and in other instances have not arranged their master's degree programs to accommodate students desiring part-time instruction in the late afternoon and evening period. More attention needs to be given to the establishment of arrangements which will meet the needs of these students.

All of the older state-assisted universities in Ohio offer master's degree programs on a fairly comprehensive basis. The Central State University offers only a limited number of programs, and the new Cleveland State University and the expected Wright State University need to develop master's degree programs as soon as possible. Further expansion of master's degree programs at state-assisted universities is recommended only in response to definite needs.

Doctoral Programs

Probably the most urgent single problem which has confronted the Ohio Board of Regents has been that of promoting further development of graduate study at the doctoral level. One phase of this development is to improve the quality of graduate instruction. A second phase is to encourage expansion of doctoral programs in appropriate circumstances. A third phase is to promote more extensive research activity in state assisted universities. A fourth phase is to improve the avenues of communication between industry and state assisted universities, so that on the one hand universities will know more about the basic technical problems of industry and on the other hand industry will know more about the research activity of universities which may promote new products and new production processes.

It must be observed at the outset that graduate study at the doctoral level is of fundamental importance to the future welfare of Ohio. The production record of industrial activity in Ohio is outstanding by any set of measurements: value added by manufacturing, capital investment in productive plant, industrial employment, per capita income. But Ohio's record in the award of graduate degrees at the doctoral level and in the performance of research financed by the federal government is not equally outstanding.

Many economists and others concerned with the future of economic growth in our country have observed that technological development contributes substantially to economic development. It is not enough for an alert management in modern business enterprise to seek improvement in the quality of present products and in current production processes. It is equally important to seek new products and new production processes which will contribute still further to the national security and the material well-being of our country. There may be shortages of raw materials to overcome. There may be production processes which will conserve raw materials, conserve water supply, require less input of energy, produce goods more economically. There may be many new products which will improve communication and transportation, provide new comforts and services for ourselves and our homes, advance our community environment, and help ensure our national defense. All of these efforts depend upon the education of scientists, engineers, and others to high levels of individual competence; upon basic knowledge which is provided primarily through our universities; upon technical development which is provided primarily through our businesses; and upon management exploitation of new ideas.

The Science Advisory Committee to the Board of Regents in a policy statement has pointed out that the primary responsibility for the development of new and improved products and of new and improved production processes rests with business enterprise. Our universities cannot and should not seek to assume this activity. Business enterprise looks to our universities for three major services. First, the universities must provide the educated talent for business enterprise, including the talent needed for the technical development effort of business. Increasingly, this means education at the graduate and particularly the doctoral level. Secondly, business enterprise looks to our universities to provide the basic research which comprises the essential background for technological improvement. In the third place, business enterprise needs closer working relationships with our universities so that basic research may be directed to problems of major business concerns and so that the findings and implications of university based research can be communicated to business. In this connection, many industries are finding it desirable to locate their technical centers near universities in order to improve working relationships.

There are two aspects of this business-university relationship which deserve particular emphasis. No one expects universities to undertake the development tasks which in our economy properly should be performed by business. No one expects business to undertake the educational tasks which in our society properly should be performed by universities. But these two separate interests have a large area of common concern. Many basic research interests arise out of practical problems facing industry. Moreover, instructional programs and continuing education programs of universities ordinarily need to be closely connected with the practical problems of our social institutions, including our economy and our technology. The need of our time is for closer collaboration between our universities and our businesses in their respective endeavors for the benefit of the American people.

In this collaboration there is a particular need for the State of Ohio to strengthen its support of doctoral study. In the past our state-assisted institutions have performed commendably in the undergraduate education of students in the arts and sciences and in various professional fields of study. It seems apparent, however, that our performance at the level of doctoral study and of basic research needs strengthening.

Doctoral Activity in Ohio

In 1963-64 there were 11 institutions in Ohio awarding doctor's degrees. These were as follows:

The Ohio State University	341
Western Reserve University	94
The University of Cincinnati	70
Case Institute of Technology	54
The Ohio University	12
The University of Akron	9
Hebrew Union College	6
The University of Toledo	2
The Kent State University	2
The Bowling Green State University	1
Cleveland Marshall Law School	1
	592

The fields in which these degrees were awarded were as follows:

Agriculture	18
Biological Sciences	48
Business	18
Education	104
Engineering	70
Humanities	36
Fine Arts	32
Health Professions	15
Home Economics	5
Law	1
Mathematics	16
Physical Sciences	121
Social Sciences	108
	592

All doctorates in agriculture were awarded by The Ohio State University, as were all doctorates in home economics. In the biological sciences 34 of the 48 degrees were awarded by The Ohio State University, six by The University of Cincinnati, and eight by Western Reserve University. Of the 18 degrees in business, 12 were awarded by The Ohio State University and six by Case Institute of Technology. In the field of teacher education 59 doctorates were awarded by The Ohio State University, 35 by Western Reserve University, five by The Ohio University, two by the Kent State University, two by The University of Toledo, and one by The University of Cincinnati. In the field of engineering 38 doctor's degrees were awarded by The Ohio State University, 31 by Case Institute of Technology, and one by The University of Cincinnati. In the Humanities 15 degrees were awarded by The Ohio State University, eight by Western Reserve University, six by Hebrew Union College, six by The University of Cincinnati, and one by The Kent State University. In the field of fine arts 25 doctorates were awarded by The Ohio State University, four by The Ohio University, and three by Western Reserve University. Of the 15 doctorates in the health professions other than the Doctor of Medicine degree, eight were awarded by The University of Cincinnati and seven by The Ohio State University. In mathematics eight doctorates were awarded by The University of Cincinnati, seven by The Ohio State University, and one by Western Reserve University. In the physical sciences 46 doctorates were awarded by The Ohio State University, 33 by The University of Cincinnati, 17 by Case Institute of Technology, 13 by Western Reserve University, nine by The University of Akron, and three by The Ohio University. In the social sciences 75 degrees were awarded by The Ohio State University, 26 by Western Reserve University, and seven by The University of Cincinnati.

These detailed statistics bear out two conclusions. First, the comprehensive university in Ohio in conducting Ph.D. programs was The Ohio State University. The two other institutions approaching a comprehensive status were Western Reserve University and The University of Cincinnati. In the more restricted field of engineering, Case Institute of Technology was second only to The Ohio State University in the number of degrees awarded in 1964 and was particularly strong in the physical sciences. Apart from Hebrew Union College, which is a specialized institution in the field of religion, five other institutions were just in the beginning of development of a doctorate program: The Ohio University, The University of Akron, The University of Toledo, The Bowling Green State University, and The Kent State University.

Scope of Ph. D. Programs

As of 1964-65, The Ohio State University listed some 1,660 students enrolled at the Ph.D. level in 65 different fields. These fields and the number of students enrolled for the autumn quarter of 1964 were as follows:[1]

Department	Ph. D. Enrollment
Accounting	19
Aero Engineering	24
Agricultural Biochemistry	4
Agricultural Economics	32
Agricultural Education	23
Agricultural Engineering	9
Agronomy	18
Anatomy	13
Animal Science	8
Architecture	1
Art	8
Astronomy	6
Biophysics	1
Botany and Plant Pathology	31
Business Organization	55
Ceramic Engineering	12
Chemical Engineering	29
Chemistry	133
Civil Engineering	18
Classical Languages	7
Dairy Science	4
Dairy Technology	6
Dentistry	0
Economics	35
Education	184
Electrical Engineering	92
Engineering Mechanics	16
English	62
Geodetic Science	10
Geography	13
Geology	19
German	13
History	48
Home Economics	25
Horticulture and Forestry	10
Industrial Engineering	19
Journalism	1
Linguistics	4
Mathematics	31
Mechanical Engineering	22
Medicine	0
Metallurgical Engineering	35
Microbiology	14
Mineralogy	11
Music	17
Nursing	0
Obstetrics and Gynecology	0
Opthalmology	0
Optometry	0
Pathology	8
Pediatrics	0
Pharmacology	2

Department	Ph. D. Enrollment
Pharmacy	20
Philosophy	18
Physical Education	37
Physics	88
Physiological Chemistry	9
Physiology	11
Political Science	24
Poultry Science	4
Preventive Medicine	0
Psychiatry	0
Psychology	114
Radiology	0
Romance Languages	15
Slavic Languages	2
Social Work	3
Sociology	38
Speech	66
Surgery	0
Veterinary Anatomy	1
Veterinary Medicine	1
Veterinary Parasitology	0
Veterinary Pathology	5
Vetinary Physiology	1
Veterinary Preventive Medicine	2
Veterinary Surgery	0
Welding Engineering	0
Zoology and Entomology	49
	1,660

The other public university in Ohio providing a comprehensive graduate program at the doctor's level is The University of Cincinnati. Doctor's degrees were available in the following fields, with enrollment as of 1964-65:[2]

Department	Ph. D. Enrollment
Aerospace Engineering and Applied Mechanics	11
Astronomy	2
Biological Chemistry	14
Biological Sciences	23
Chemical and Metallurgical Engineering	13
Chemistry	60
Classics	13
Economics	17
Education	15
Electrical Engineering	8
English and Comparative Literature	15
Geography and Regional Planning	4
Geology	17
Germanic and Slavic Languages	7
History	16
Industrial Medicine and Health	12
Materials Science	7
Mathematics	24
Metallurgical Engineering	6
Microbiology	7
Pharmacology	3
Philosophy	12
Physics	17
Physiology	2
Political Science	15
Psychology	39
Romance Languages	2
Sociology and Anthropology	2
Surgery	19
Tanning Research	1
	403

Among the other state-sponsored universities, The Ohio University offered graduate study at the Ph.D. level in chemistry, English, fine arts, physics, psychology, speech, and education. The total enrollment was 211 students in 1964-65. The Bowling Green State University offered a Ph.D. program in English. There were 23 students enrolled in 1964-65. The Kent State University offered a Ph.D. program in biological science, chemistry, education, English, and history. There were 84 students enrolled in 1964-65.

Among the other municipally sponsored universities, The University of Akron offered a Ph.D. in rubber chemistry and polymer science. The enrollment was 18 students in 1964-65. The University of Toledo offered doctor's degrees in education. The enrollment was 59 students in 1964-65.

In cooperation with The Ohio State University, The Miami University had Ph.D. programs in the fields of botany, chemistry, economics, educational administration, English, geography, geology, government, guidance and counseling, history, microbiology, and physics. There were 19 students enrolled in 1964-65.

With the exception of The University of Cincinnati, all of these doctoral programs just mentioned were in very early stages of development. Enrollments tended to be small. The future role of each institution in graduate study at the Ph.D. level was uncertain. All of these institutions were interested in expanding their graduate instruction at the doctoral level.

It is probably fair to say that this interest on the part of the state and municipal universities was one major reason for the creation of the Board of Regents. It was hoped that some planning beyond institutional desires as such might be brought to bear upon this whole structure of graduate instruction under public auspices in Ohio.

[1] *The Graduate School Record,* The Ohio State University, Autumn 1964 (Vol. 18), pp. 14-15.

[2] These and other data on Ph. D. enrollment were provided by the institutions involved.

Desirable Size of Graduate Enrollments

In 1956 in the John Dale Russell report prepared for the Ohio College Association, data were included to show that as of 1954-55 Ohio's colleges and universities conferred some 2,000 masters' degrees and nearly 350 doctors' degrees.[3] At the master's level, the degrees awarded were 3.4 percent of all masters' degrees awarded in the United States that year. At the doctor's level, the degrees awarded were 4 percent of the national total. As of 1955 Ohio was estimated to have a population of 8.9 million persons, or 5.5 percent of the United States total. Dr. Russell implied that Ohio should at least equal its proportion of the national population in the award of degrees at the masters' and doctors' levels. Indeed, Dr. Russell suggested that Ohio as a state needed more institutional centers where the master's degree might be available. He also suggested the possibility of some expansion in doctors' programs, but warned that careful planning would be needed.

In 1958 the Baker Committee appointed by Governor O'Neill reported that Ohio institutions then offering masters' degrees and doctors' degrees could accept 38 percent more students at the first level and 18 percent more students at the doctor's level.[4] Moreover, the report said that this capacity would increase by 1960. The study concluded:

> The present acute need, therefore, is not for added facilities, but rather to motivate more of our youth of superior ability to enroll in graduate programs already available. The importance of graduate work to Ohio and her economy cannot be overemphasized. Even though such education is specialized and often restricted to small numbers of students, with increasing costs, it is essential that this program be strengthened constantly.

The staff of the Board of Regents has analyzed the most recently published data on advanced degrees conferred by various institutions of higher education in Ohio and has compared the record with data for certain major industrial states. These data on earned degrees awarded at the masters' and at the doctors' levels are shown in Table 22. On a percentage basis, as of 1961-62, Ohio institutions awarded 4.1 percent of all masters' degrees and 3.7 percent of all doctors' degrees granted that year. When this record is compared with that of other states in relation to their proportion of the total population, the result is not satisfactory. At the doctor's degree level, for example, New York, Michigan, Indiana, Illinois, Wisconsin, Minnesota, and Iowa conferred a larger proportion of all degrees granted than their share of the national population. The record of Pennsylvania was 0.8 of one percent lower than the state's share of total population, but Ohio's record was 1.7 percent lower.

The enrollment data for graduate degrees are

TABLE 22

Ohio's Place in Graduate Study
1961-1962

	Master's Degrees	% Total	Doctor's Degrees	% Total	Population 1960 (000)	% Total
United States	84,889	100.0	11,622	100.0	179,323	100.0
New York	11,734	13.8	1,580	13.6	16,782	9.4
California	7,228	8.4	1,205	10.4	15,717	8.8
Pennsylvania	4,100	4.8	634	5.4	11,319	6.3
Michigan	5,312	6.2	643	5.4	7,823	4.4
Illinois	4,763	5.6	909	7.8	10,081	5.6
Massachusetts	4,956	5.9	812	7.0	5,149	2.9
Texas	3,586	4.2	365	3.1	9,580	5.3
Indiana	3,835	4.5	553	4.8	4,662	2.6
Wisconsin	1,806	2.1	447	3.9	3,952	2.2
Minnesota	1,244	1.5	276	2.4	3,414	1.9
Iowa	1,088	1.3	338	2.9	2,758	1.5
Ohio	3,500	4.1	426	3.7	9,706	5.4

Source: U.S. Office of Education *Earned Degrees Conferred 1961-1962* (1963); and Bureau of the Census, *United States Census of Population 1960: United States Summary* (1961).

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[3] John Dale Russell, *Meeting Ohio's Needs in Higher Education* (The Ohio College Association, 1956), p. 13.

[4] The Ohio Commission on Education Beyond the High School, *Ohio's Future in Education Beyond the High School,* December, 1958, p. 43.

shown in Table 23. Here again the results are much the same. The enrollment in Ohio is much less than its share of the national population compared with the record of these other eight states.

To be sure, a comparison of degrees granted in graduate study with total population is not necessarily an exact measure of educational performance. The outstanding graduate schools of the East draw their students from all over the United States, and many of these may return to their home states to carry on their professional careers. Nonetheless, it is clear that in comparison with states of similar size, and especially in comparison with neighboring states, the record of Ohio institutions in graduate study is not noteworthy.

TABLE 23

Enrollment for Advanced Degrees
Fall, 1962

	Enrollment	Percent of National Total	Percent of National Population (1960)
United States	373,845	100.0	100.0
New York	59,291	15.8	9.4
California	42,272	11.3	8.8
Pennsylvania	25,354	6.8	6.3
Michigan	21,534	5.8	4.4
Illinois	20,172	5.4	5.6
Massachusetts	18,665	5.0	2.9
Texas	13,980	3.7	5.3
Indiana	11,092	2.3	2.6
Wisconsin	7,032	1.9	2.2
Minnesota	7,466	2.0	1.9
Iowa	4,878	1.3	1.5
Ohio	15,970	4.3	5.4

Source: Enrollment Statistics from *Enrollment for Advanced Degrees*, First Term, 1962, U.S. Office of Education, OE-54019-62, U.S. Government Printing Office, 1964.

There are two possible explanations for this situation. One is that higher educational institutions in Ohio have not developed outstanding graduate programs which have attracted a substantial number of students. The other possible explanation is that financial support of graduate instruction has not been sufficient to permit the development of outstanding graduate activity. The two possible explanations are, of course, interrelated.

It seems apparent that an expansion of graduate education is desirable in Ohio. Certainly, the present record in award of graduate degrees is not a satisfactory one. It would be desirable to double the number of masters' degrees and doctors' degrees above the 1962 figures as soon as possible and to maintain a continuing superiority in the proportion of such degrees to the national total in comparison with Ohio's proportion of the national population.

Quality of Graduate Education

The whole subject of numbers of degrees cannot be separated from a concern for the quality of graduate education. At best, quality is a difficult characteristic to define and even more difficult to identify. To a considerable extent quality is often a subjective measurement or reaction on the part of an individual person.

Nonetheless, efforts will inevitably be made to define the quality of graduate instruction provided by graduate schools. From time to time in various ways actual evaluations of graduate schools are made by organizations and individuals.

There is only one university in Ohio which holds membership in the Association of American Universities. This Association was originally established to bring together the major universities providing graduate instruction at the Ph.D. level. As of 1965 there were 40 members in the United States. Although the Association has been slow to expand its membership, and although the dividing line between members and non-members is indistinct in some instances, nonetheless, membership in the Association is regarded as providing a kind of approval of the quality of Ph.D. instruction by an institution. Of the institutions offering graduate study in Ohio, only The Ohio State University as of 1965 held membership in the Association of American Universities.

In his comprehensive study of graduate education, Bernard Berelson obtained information from 92 institutions.[5] He divided these 92 institutions into four groups.[6] This grouping has been widely regarded as a kind of qualitative classification of institutions awarding the Ph.D. degree. First, there were the top 12 institutions; within this group were three public universities in the Middle West: Michigan, Illinois, and Wisconsin. Secondly, there were the "next 10 universities." In the Middle West this group included Ohio State, Indiana, and Minnesota. The third group was made up of the remaining members of the Association of American Universities plus universities receiving Ford Foundation accomplishment awards. Finally, there was a fourth group labeled "other universities." There were no Ohio universities in the third group and three in the fourth category of "other universities": Case Institute, Cincinnati, and Western Reserve.

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[5] Bernard Berelson, *Graduate Education in the United States* (New York: McGraw-Hill Book Company, 1960)

[6] *Ibid.*, pp. 280-281.

The recommendations put forward by Berelson in 1960 have considerable validity and deserve careful consideration.[7] Among these recommendations was the following: "16. Over the visible future, the national load of doctoral study should be carried mainly by the presently established institutions of top- and middle-level prestige." To be sure, Berelson used the qualifying adverb "mainly" in this statement. But the implication of the qualification is clear. Berelson was indicating his judgment that the best interests of American higher education in terms of quality of Ph. D. instruction would not be served by a widespread or indiscriminate expansion of graduate education at the Ph. D. level.

The membership in academic disciplines themselves engage in a qualitative ranking of the institutions granting Ph. D. degrees. There may be a tendency for the universities granting the largest number of doctors' degrees to stand high in these rankings, and to some extent there may indeed be a correlation between numbers of doctors' degrees granted and the strength or quality of the institution granting the degree. These evaluations do occur, and they cannot be ignored. They demonstrate that academic disciplines themselves are likely to believe that a degree from one institution may have greater qualitative importance than a doctor's degree from some other institution.[8]

Another measure of quality in graduate work is the image it presents to graduate students. At the present time, there are two sources of measurement which suggest what this image may be. One of these is the number of recipients of Woodrow Wilson Fellowships awarded by the Woodrow Wilson National Fellowship Foundation who select a particular university as a place to study. These fellowship awards are made on a competitive basis each year to students graduating from colleges who are interested primarily in becoming college and university teachers. The selection of state universities in the Middle West for graduate study by Woodrow Wilson fellows from 1958 to 1962 is shown in Table 24.

A second index to attractive power is provided by the award of science fellowships by the National Science Foundation. These awards are made to individuals who then select the institution to attend. Presumably the individuals who receive the various fellowship and traineeship awards of the National Science Foundation are attracted to institutions whose graduate programs have some special reputation in terms of quality, scope, or other characteristic. The num-

TABLE 24

Woodrow Wilson Fellows at the State Universities

State	1958-59	1959-60	1960-61	1961-62	1962-63	Total
Ohio	5	5	4	1	5	20
Iowa	7	10	8	8	8	41
Illinois	16	14	9	15	8	62
Indiana	5	16	12	23	18	74
Michigan	36	31	19	37	17	140
Minnesota	6	21	11	10	8	56
Wisconsin	38	40	38	39	26	181

Source: Academy for Educational Development.

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[7] *Ibid.*, pp. 234-258.

[8] As illustrations of the concern of academic disciplines with the quality of graduate instruction, see Dexter Perkins and John L. Snell, eds., *The Education of Historians in the United States* (New York: McGraw-Hill Book Company, 1962); and Albert Somit and Joseph Tanenhaus, *American Political Science: A Profile of a Discipline* (New York: Atherton Press, 1964.)

ber of individuals selecting particular institutions in Ohio and elsewhere in 1963-64 is shown in Table 25.

TABLE 25

Institutions Attended by Awardees National Science Foundation Graduate Fellowship Awards—1963-1964

Ohio Institutions	Number of Awardees Enrolled
Ohio State University	38
Case	17
Western Reserve	12
Cincinnati	10
Toledo	7
Kent	5
Ohio University	5
Akron	3
Total	97

Major Institutions in Neighboring States

Wisconsin, U. of	155
Michigan, U. of	112
Illinois, U. of	96
Minnesota, U. of	67
Purdue	53
Northwestern	46
Carnegie Tech	39
Iowa State U.	24
Total	592

Source: National Science Foundation, *Grants and Awards, Fiscal Year 1964*, pp. 248-252.

In the field of engineering education at the graduate level, the consultants state that Ohio is lagging. Selected data on the distribution of graduate engineering traineeship awards by the National Science Foundation are shown in Table 26. It would appear that the institutions in Ohio have not received a proportionate share based upon the population of the state. The evidence here is a reflection of the judgment of National Science Foundation advisory panels about the relative qualitative merits of institutions in Ohio and in other states providing graduate engineering programs.

TABLE 26

NSF Graduate Engineering Traineeship Awards 1963-1964

	Awards		Awards Per 100,000 People
Ohio:			
Case	17		
Ohio State	16		
Cincinnati	4		
Total for Ohio		37	0.4
Illinois:			
Illinois	56		
Northwestern	28		
I. I. T	11		
Total for Illinois		95	1.0
Michigan:			
Michigan	51		
Michigan State	14		
Michigan Tech.	4		
Wayne	3		
Total for Michigan		72	0.9
Indiana:			
Purdue	49		
Notre Dame	11		
Total for Indiana		60	1.3
Iowa:			
Iowa State	13		
Iowa, U. of	6		
Total for Iowa		19	0.7
Minnesota:			
Minnesota, U.	32	32	1.0
Wisconsin:			
Wisconsin, U.	23	23	0.6
Total Awards for Entire U.S.A.		1,200	0.7

Source: Academy for Educational Development.

The consultants retained by the Board of Regents have all emphasized the desirability of the state giving increased attention to support of graduate study and research, especially at The Ohio State University. Assistance to The University of Cincinnati has also been proposed. Consultants have reported that there has been apparent "indifference and neglect" in the past in the development of educational policies and financial support needed for the proper development of graduate work at the Ph. D. level.

The consultants declare that a large-scale and financially adequate development of graduate study and research in Ohio will bring about a number of desirable changes. Such a development will exert a favorable influence on higher education in general in Ohio. Graduate education of quality will tend to improve undergraduate education as well.

Secondly, business and industry tend to look to neighboring institutions of higher education in the recruitment of scientific, engineering, and other high level staff, and for consultative services in the performance of their own technical activities. The outstanding developments of aerospace and electronics industries elsewhere in the nation have been based in part upon the strong public and private support of institutions of higher education having a quality program of graduate study and research. In the third place, an interchange of scientific and engineering personnel and of graduate students between industry and universities can be mutually beneficial in stimulating both university research and industrial development.

Expansion of Ph. D. Programs

Unquestionably, the quality of Ph. D. programs of study and research should be a major concern for the Board of Regents and for state-assisted institutions of higher education in Ohio. It will not be easy for an institution beginning a Ph. D. program to become strong or to achieve recognition in a short period of time. Furthermore, it is doubtful whether a Ph. D. program should be undertaken by an institution in the absence of considerable prior experience with a graduate program at the master's level.

Yet in spite of our concern for quality achieved through experience at the doctor's level, there are also pressures at work in the United States and in Ohio to expand immediately instructional programs for graduate study and research. It has already been suggested that graduate study and research might well be doubled in Ohio in accordance with the population and economic resources of this state.

A first pressure for expansion of Ph.D. programs is the increasing number of employees in government and business who desire to obtain the degree. It is not always possible for governmental agencies and for industry to find the personnel with the advanced educational qualifications they desire. In consequence, these agencies and these industries hire personnel with lesser educational qualifications and encourage such persons to study for advanced degrees. In these circumstances, proximity of opportunity for part-time Ph.D. study and close cooperation between universities and industry become important.

In the second place, an expansion of Ph.D. programs may encourage more persons to enroll as graduate students. We shall not obtain an expansion of graduate enrollment in Ohio solely by increasing present programs. Some new programs may also be necessary in order to encourage expansion of enrollment.

In the third place, individual institutions—especially their faculties and staffs—are inclined to believe that graduate instruction at the Ph.D. level adds prestige to an institution and its personnel. This is the least important of the possible reasons for expansion of graduate education, but may nonetheless be influential.

There is still a fourth factor to bear in mind. Some competition in graduate study and research may be desirable. Monopoly in higher education may be as harmful to progress and freedom as monopoly in other social institutions: economic, social, and religious. When only one institution undertakes graduate study and research within a state, there may not be any basis for comparing its accomplishments and failures with those of other institutions. Competition, moreover, is a spur to effort.

All of these forces tend to induce existing institutions to want to award the Ph.D. degree if they now provide instruction at the master's level, or to want to award the master's degree if they now terminate instruction with the baccalaureate degree.

The Qualification for offering Graduate Study

In 1964 the Association of Graduate Schools in the Association of American Universities and the Council of Graduate Schools in the United States issued a joint statement on the Doctor of Philosophy degree. The statement points out that the Ph.D. degree has become the mark of highest achievement in preparation for creative scholarship and research. The statement then sets forth the principal characteristics "of programs of good quality leading to the Doctorate of Philosophy."

1. The personnel of a university should understand the long tradition of excellence associated with the degree and should be aware of the responsibilities inherent in Ph.D. instruction.
2. The university as an institution must be dedicated to freedom of inquiry and expression.
3. The need for a doctoral program in a particular field should be established in terms of a shortage of doctoral personnel, and in terms of special traditions and resources of the university which make it desirable to undertake the program.
4. Of highest importance for the establishment of a sound Ph.D. program is the

existence of a graduate faculty of scholars numbering four or five specialists in the field.

5. Doctoral programs in complementary fields of study tend to strengthen and stimulate any one field of study.
6. The institution must be prepared to meet the needs of the graduate faculty in terms of salaries, moderate instructional load, research and library facilities, office space, travel, stenographic and other assistance, and sabbatical or professional leave.
7. The institution should have adequate resources available for support of the graduate student in the form of fellowship awards, assistantships, and loan funds.

The other requirements for a quality doctoral program set forth by the Association of Graduate Schools and the Council of Graduate Schools have to do with courses of instruction, admission of students, advising doctoral students, supervising doctoral research, and conducting examinations. These are all matters for determination by institutions offering doctoral programs in the light of prevailing practices.

In addition, the Council of Graduate Schools in the United States in 1965 issued a statement setting forth minimum standards for new doctoral programs and formal steps to be taken in the consideration of new doctoral programs.

The minimum standards proposed by this statement were:

1. The President and the governing board are solidly in support of Ph.D. work, and the faculty in general is enthusiastic about the program. Moreover, the institution must have an established organization for carrying on the administration of graduate study.
2. The institution should have a faculty actively engaged in research prior to the the initiation of a Ph.D. program.
3. There must be an adequate research library.
4. There must be adequate library facilities for independent study, adequate laboratory facilities for research investigation, and adequate funds for equipment, supplies, and travel needed in research.
5. There must be sufficient teaching assistantships and fellowships to assure a student body large enough to justify graduate courses and seminars, and to insure a stimulating association of students interested in graduate study and research. An adequate student body does not exist when students are living primarily off-campus and are able to enroll only in late afternoon and evening classes on a part-time basis.

The formal steps recommended for consideration of a proposed doctoral program as set forth by the Council of Graduate Schools in the United States are as follows:

1. Interested faculty members and staff should determine that there is a desire on the part of the faculty and administration generally to undertake the program.
2. Reasons for the desirability of the program should be carefully set forth.
3. An appropriate plan of course offerings, student recruitment, and necessary facilities should be developed in accordance with accreditation standards.
4. An inventory of present faculty, library and laboratory, and student resources should be made.
5. A schedule of action should be prepared to meet the plan requirements.
6. The plan and schedule of action should be approved by the appropriate officials of the institution.
7. Outside consultants should be obtained to review the plan and schedule.
8. The report of consultants should be used as the basis for a final proposal.
9. The final proposal should receive appropriate faculty, administrative, and external approval.
10. The necessary commitment of funds to support the program should be provided.

Plans for Expansion

The words of caution reported above should be taken seriously. Doctoral programs should not be expanded without careful consideration and planning.

The staff of the Board of Regents has given a great deal of attention during its first two years of existence to the matter of how to approach the need for expansion and improvement of graduate study. One possibility would be to declare a moratorium on the introduction of any new doctoral degree programs at state-assisted universities. There is a reasonable argument which can be made in support of this position. It may be asserted that inadequate support of doctoral programs has been the major failure of the past and that improvement is most likely to occur through more adequate support of the resources for graduate study which have thus far been developed.

Another possibility is to permit each state-assisted university to go its own way in the development of doctoral study. Here again there is a reasonable argument which might be advanced for this practice. It may be asserted that each university will be properly cautious about undertaking doctoral programs, will prepare these programs carefully, and will observe the required standards of quality in order to obtain accreditation. In other words, so-called "natural development" which has controlled program expansion in the past should continue to do so in the future.

There are several reasons why it does not seem appropriate for the Board of Regents to adopt either of these positions. If expansion of doctoral work is desired, then additional programs will help to achieve this objective. With more programs, more effort will be expended to recruit students. Moreover, in a populous state like Ohio, doctoral programs may be especially desirable in the larger cities and metropolitan areas in order to meet the needs of various parts of the state. Furthermore, some innovation in graduate study may be desirable, and it is often easier for an institution to begin a new program with innovative characteristics than for an institution to alter an existing program. On the other hand, "natural development" does not seem feasible because for many years—from approximately 1906 to 1956—The Ohio State University was recognized as the only state-assisted university authorized by law and by agreement to offer doctoral programs. After 1956 other state universities began to push ahead with doctoral activities, but most of them realized that individual initiative was not a satisfactory basis of development.

Since the Board of Regents is authorized by law to approve new degrees and new degree programs, the Board cannot escape responsibility for decision-making about the scope and extent of new doctoral programs to be undertaken by the State-assisted universities of Ohio. Such decisions should be considered in accordance with some set of standards or plan.

One arrangement considered was to divide up the disciplines and professional fields of study and assign programs at the doctoral level to individual institutions. Such an effort would have involved primarily Ohio, Miami, Bowling Green State, and Kent State Universities. Thus one university might have been authorized to develop graduate programs at the doctoral level in teacher education and certain related disciplines such as psychology and sociology. Another might have been authorized to develop graduate programs at the doctoral level in engineering and the related disciplines in the physical sciences. A third might have been authorized to develop graduate programs at the doctoral level in the fine arts and related disciplines in the humanities. A fourth might have been authorized to develop graduate programs at the doctoral level in business administration and certain related disciplines such as economics and business administration. Under such an arrangement some university would also have undertaken to develop doctoral programs in the biological sciences. Insofar as The Universities of Akron and Toledo are concerned, these institutions might have been encouraged to develop doctoral programs in fields especially related to the rubber industry in Akron and to the glass industry in Toledo.

The *Provisional Master Plan* published by the Board of Regents in April, 1965, contemplated some such plan as the one just outlined as the basis for the expansion of graduate study at the doctoral level in Ohio. The careful consideration of this possible arrangement which has been conducted over an eight months' period suggests that it is not a feasible one for the Board to pursue. In various discussions which have taken place with university officials, no one university or its faculty has expressed a willingness to proceed on this basis.

In addition, when the Board staff requested each state university to canvass its possible fields of doctoral interest, no pattern of concentration was apparent in the responses which were provided. All the universities were interested in the development of doctoral programs in English, teacher education, and business administration. Four or five universities were interested in doctoral programs in various disciplines of the humanities, social sciences, physical sciences, and biological sciences. The Board of Regents has made a complete tabulation of these responses and has distributed it to all the state-assisted universities.

In consequence, the Board has sought to formulate a workable, alternative plan for the approval of new Ph. D. programs. This plan involves the following elements:

1. Preliminary screening of doctoral programs proposed by any university at an early stage in their development.
2. Emphasis upon evidence of need for a new doctoral program, with particular encouragement to be given to proposed programs of an interdisciplinary nature or of experimental programs seeking new objectives.
3. Appropriate consideration of the resources of staff and facilities for the proposed program and of the extent to which the program might duplicate expensive facilities and staff resources which are under-utilized in an existing doctoral program.
4. Final approval of a program only when all planning phases have been completed in appropriate detail.

In the evaluation of these aspects of proposed doctoral programs, the Board of Regents has approved the creation of an Advisory Committee on Graduate Study which will consist of a representative from each state university. This committee began to function in January, 1966. When it seems desirable to do so, expert consultants will be retained by the Board to assist in the evaluation of proposed doctoral programs.

In connection with doctoral programs proposed in the field of teacher education, the Board retained Associate Dean John X. Jamrich of the College of Education, Michigan State University, to visit all of the state-assisted universities in the late summer and autumn of 1965. In his report to the Board Dean Jamrich pointed out that a doctoral program in teacher education might be developed in one of several different areas of concentration: school administration, guidance and counseling, curriculum development and supervision (elementary or secondary), educational psychology, educational philosophy, science education, and others. Dean Jamrich reported that in 1963-64 Ohio universities granted 4.4 percent of all doctorates in education conferred in the United States. This proportion may be compared with 5.4 percent of the national population located in Ohio. Dean Jamrich recommended that Ohio should set as its goal the award of six percent of all doctorates in education, and that in order to do this the state-assisted universities would have to expand substantially the number of degrees thus conferred. He suggested that all of the state-assisted universities might eventually be needed to assist in this endeavor. He recommended that pending program proposals be approved and that further planning go forward on additional programs.

In connection with proposals for doctoral programs in psychology, the Board of Regents in 1965 retained the services of Dr. Sherman Ross of the American Psychological Association as consultant. In his report to the Board, Dr. Ross pointed out the growing demand for psychologists in teaching, in clinical counseling, in industry, in school systems, and elsewhere. He recommended that various state-assisted universities be encouraged to develop their special interests in graduate study and research at the doctoral level in the field of psychology.

It must be emphasized that decisions to proceed with the development of new doctoral programs must be made in conjunction with the appropriate accrediting agencies.

Research

The research activities of American universities have assumed major importance since World War II. Before 1940 the colleges and universities of the United States had developed extensive instructional programs and had reached more students than anywhere else in the world. But the basic ideas in chemistry, physics, engineering, medicine, the social sciences and in cultural fields of study continued in large measure to be imported from overseas.

The demands of World War II required the federal government to begin large-scale support of university research, and American universities responded in remarkable fashion. Substantial advances in the weapons of war were realized through the combined efforts of the federal government, various universities, and American engineering and industrial firms. The atomic bomb represented only the most spectacular of these achievements.

For a number of reasons since 1945, the federal government has found it desirable to continue to provide large-scale support of scientific research—"the endless frontier," as Dr. Vannevar Bush described it. This support has tended to increase since 1957, the year of Sputnik. At the end of World War II, it is estimated that total federal government research and development obligations came to less than two billion dollars a year, and this was cut back to under one billion dollars by 1947. Gradually the outlays increased to about three billion a year in 1953, but declined again until 1956. Since 1957 these research and development obligations of the federal government have grown from three billion dollars a year to over 16 billion dollars in 1965.

Not all of this outlay for research and development is directed toward American universities. It has been estimated by the National Science Foundation that about 70 percent of all federal research and development expenditures are for development projects, and practically all of this work is done by industry, supplemented by the work of federal government laboratories themselves. Only about 30 percent of federal government expenditures go for applied research and for basic research. About half of all expenditures for basic research, however, are directed to American universities, and it is hoped that this proportion may increase. Most applied research is performed in industry. Thus, university research supported by the federal government is only a small part of the total federal outlay for research and development (some 1.7 billion out of some 16 billion dollars in the fiscal year 1965).[9]

It must be emphasized, however, that federal support constitutes the primary source of funds for the basic and applied research activities of American universities. State governments provide very little in the way of direct appropriation support for the current operation of research activity. The state governments have helped to build research facilities for state universities, but the federal government provides the current operating funds.

It must also be emphasized that federal government support of basic research tends to be made on a project grant basis. The two major federal agencies supporting basic research are the National Science Foundation and the National Institutes of Health of the Public Health Service. The Atomic Energy Commission and the National Aeronautics and Space Administration also support basic university research in their respective fields of nuclear physics and space exploration. The military departments support projects related primarily to weapons and communications systems.

The initiative in project proposals usually comes from universitity scientists and engineers. The judgment about the competence of an individual investigator and about the desirability of a particular project proposal is usually made by a panel of scientific experts drawn from American universities and from government agencies. Thus, on the one hand in order to participate substantially in basic research today a university must have facilities available for research and faculty who have an interest in undertaking research. In addition, both facilities and faculty and the administrative support provided must stand up under the critical evaluation of experts drawn from the top scientific circles of the nation.

Two or three other general observations about research are in order here. American universities are tending to be ranked today in terms of the volume of research grants they receive from federal government agencies. It is inevitable that under the system of research grant support which is now in effect research projects sponsored by federal government agencies express a qualitative judgment about universities and their faculties. The more sponsored research at an institution, the greater is the evidence of its qualitative excellence. There is no way to escape this kind of evaluative situation under current circumstances.

Another matter of note is that research has become a major university activity today. American universities have had to assume the intellectual leadership of Western society. This leadership can only be demonstrated by the extent of our contributions to the advancement of knowledge.[10]

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[9] National Science Foundation, *Federal Funds for Research, Development, and Other Activities, Fiscal Years 1963, 1964, 1965,* Vol. XIII, NSF 65-13 (Washington: U. S. Government Printing Office, 1965).

[10] Cf. Report of the Committee on Science and Public Policy, National Academy of Sciences, *Federal Support of Basic Research in Institutions of Higher Learning* (Washington, D. C.: National Academy of Sciences, National Research Council, 1964.)

The importance of this function can also be indicated in dollar amounts. Estimates of the Office of Education for the year ending June 30, 1964, indicate that nearly two billion dollars was spent by American universities for organized research, compared with 2.8 billion dollars spent for instruction.

Much has been said in the past year about some American universities tending to devote too much attention to research and too little attention to instruction. Yet scholars acknowledge generally that research and instruction are intimately related, and that effective instruction must be based upon the learning which only research and insight can provide. Yet it is undoubtedly a fact that many outstanding faculty members have been encouraged in recent years to give more time to the laboratory than to the classroom. The problem here is one of balance of effort. At a certain period in his career a faculty member may well be expected to give more attention to research than to instruction, although the two will seldom be completely separated. At other periods more time may be given to instruction than to research. A university and its faculty members must find that balance between research and instruction which is most consistent with the scholarly objectives of the institution and the individual.

Finally, there is the relationship between university research and our national welfare. Basic research has as its purpose the advancement of knowledge. Sometimes, a particular problem which intrigues a scientist or scholar may seem to have little practical application. When Dr. Robert Goddard began his experimentation with rockets, few thought that space exploration might ever be a major preoccupation of the American people. When scientists began to study the atomic and nuclear elements of matter, few thought that a great new source of energy was in the process of development for both defense and peaceful application. When scientists began to study the process of human hearing and the transmission of sound, no one could have envisaged all the great accomplishments in communication facilities, including the amelioration of human defects in hearing, which we now enjoy.

The fact is that much basic research has had practical applications to the health and material well-being of the American people in the past and that we expect this to continue in the future. Moreover, the very relationship of human intelligence to intellectual exploration may help to guarantee practical accomplishment. It seems likely that most scholars study problems which arise out of experience, and that knowledge is seldom far removed from the concerns of everyday life. Today especially, we tend to identify major problems and then to undertake the exploration of knowledge and the engineering development in order to find solutions to these difficulties.

One of the consequences of this set of circumstances is to make research a matter of importance to the economic activity of the country, and of every state in the country. Research does "spin-off" ideas about new products and new production processes. Moreover, where the research is done may influence where the product is developed and produced, or where a new production process is introduced. More and more today research is related to economic growth, and research performance affects economic growth in a particular area or state.

Ohio's Research Performance

The State of Ohio as of 1964 contained 5.28 percent of the population of the United States. In 1962 the universities of the state, public and private enrolled 4.27 percent of all the graduate students enrolled for graduate work at the master's and doctor's degree level in the United States. In 1964 the State of Ohio contributed 5.96 percent of all federal government revenue collections in the United States.

Yet the total federal government research and development funds spent in 1964 at Ohio's universities came to only 1.92 percent of all such expenditures throughout the United States as a whole. This proportion may be misleading, because the expenditures for research by American universities include the outlay required for university management and operation of certain large-scale laboratories set up by federal agencies. For example, the Atomic Energy Commission has operated its Los Alamos Scientific Laboratory through the University of California and its Lawrence Radiation Laboratory through the same institution; the Argonne National Laboratory is operated by the University of Chicago. The Jet Propulsion Laboratory of the California Insitute of Technology is supported by the National Aeronautics and Space Administration. The Lincoln Laboratory of the Massachusetts Institute of Technology is supported by the Department of the Air Force. The Arctic Research Laboratory of the University of Alaska is supported by the Department of the Navy. The Army Mathematics Center at the University of Wisconsin is supported by the Department of the Army. Altogether, there are some 29 or 30 of these federal government "contract research centers" operated by universities. None of these centers is located in Ohio or managed by an Ohio university.

If the expenditures for these research centers are omitted from consideration, we find that 3.21 percent of all federal government research and development funds going to American universities in 1964 came to universities in the State of Ohio. Although this 3.2 percent is better than the 1.9 percent proportion which includes contract research center outlays, this performance record is still not consistent with Ohio's proportion of the nation's population, with Ohio's proportion of graduate enrollment, or with Ohio's proportion of federal government tax collections.

The national pattern in distribution of research and development funds to American universities is shown in the accompanying table. There is only one conclusion which can be drawn from these data. The Ohio record in performance of research and development projects sponsored or supported by federal government agencies is not adequate.

TABLE 27

Total Federal Research and Development Expenditures in Educational Institutions, Compared with Selected National Indices
Fifty States and Nine Regions

State	1964 Federal Research and Development Expenditures in Educational Institutions[1]		1964 Population[2]		1962 Enrollment for Graduate Degrees[3]		1964 Federal Revenue Collections[4]	
	dollars (1000's)	%	persons (1000's)	%	Persons	%	dollars (1,000,000's)	%
New England								
Maine	1,197	.07	989	.52	187	.05	270	.24
New Hampshire	3,922	.23	654	.34	814	.22	236	.21
Vermont	3,147	.18	409	.21	252	.07	120	.11
Massachusetts	189,440	11.13	5,338	2.79	18,665	4.99	3,222	2.87
Rhode Island	7,360	.43	914	.48	1,786	.48	470	.42
Connecticut	20,102	1.18	2,766	1.45	9,994	2.67	1,945	1.73
Total	225,168	13.22	11,070	5.79	31,698	8.48	6,263	5.58
Middle Atlantic								
New York	145,336	8.54	17,915	9.36	59,291	15.85	20,167	17.97
New Jersey	33,181	1.95	6,682	3.49	11,045	2.95	3,514	3.13
Pennsylvania	58,262	3.42	11,459	5.99	25,354	6.78	7,089	6.32
Total	236,779	13.91	36,056	18.84	95,690	25.58	30,770	27.42
South Atlantic								
Delaware	1,670	.10	491	.26	981	.26	986	.88
Maryland	73,952	4.34	3,432	1.79	6,986	1.87	2,629*	2.34
D. C.	17,607	1.04	808	.42	8,233	2.20	....	....
Virginia	10,621	.62	4,378	2.29	2,779	.74	824	1.63
West Virginia	2,581	.15	1,797	.94	1,398	.37	398	.35
N. Carolina	15,516	.91	4,852	2.54	5,792	1.55	2,738	2.44
S. Carolina	2,216	.13	2,555	1.34	1,899	.51	490	.44
Georgia	11,304	.67	4,294	2.24	3,535	.95	1,415	1.26
Florida	18,050	1.06	5,705	2.98	5,081	1.36	1,803	1.61
Total	153,517	9.02	28,312	14.80	36,684	9.81	12,283	10.95
East North Central								
Ohio	32,680	1.92	10,100	5.28	15,970	4.27	6,693	5.96
Indiana	20,519	1.21	4,825	2.52	11,092	2.97	2,549	2.27
Illinois	124,741	7.33	10,489	5.48	20,172	5.39	8,698	7.75
Michigan	47,337	2.78	8,098	4.23	21,534	5.76	9,383	8.36
Wisconsin	21,640	1.27	4,107	2.15	7,032	1.88	1,959	1.76
Total	246,917	14.51	37,619	19.66	75,800	20.27	29,282	26.10
East South Central								
Kentucky	5,761	.34	3,159	1.65	2,984	.80	1,845	1.65
Tennessee	12,244	.72	3,798	1.99	4,483	1.20	1,042	.93
Alabama	9,207	.54	3,407	1.78	2,482	.66	726	.65
Mississippi	4,128	.24	2,314	1.21	1,389	.37	343	.31
Total	31,340	1.84	12,678	6.63	11,338	3.03	3,956	3.54

State	1964 Federal Research and Development Expenditures in Educational Institutions[1]		1964 Population[2]		1962 Enrollment for Graduate Degrees[3]		1964 Federal Revenue Collections[4]	
	dollars (1000's)	%	(1000's) persons	%	Persons	%	dollars (1,000,000's)	%
West North Central								
Minnesota	22,228	1.31	3,521	1.84	7,466	2.00	1,764	1.57
Iowa	18,076	1.06	2,756	1.44	4,878	1.30	856	.76
Missouri	16,778	.99	4,409	2.30	7,747	2.07	2,597	2.31
North Dakota	1,102	.06	645	.34	714	.19	134	.12
South Dakota	1,152	.07	715	.37	533	.14	153	.14
Nebraska	3,621	.21	1,480	.77	2,150	.57	665	.59
Kansas	7,104	.42	2,225	1.16	4,946	1.32	738	.66
Total	70,061	4.12	15,751	8.23	28,434	7.59	6,907	6.15
West South Central								
Arkansas	3,205	.19	1,933	1.01	1,218	.33	359	.32
Louisiana	11,067	.65	3,468	1.81	4,515	1.21	928	.83
Oklahoma	7,807	.46	2,465	1.29	5,297	1.42	1,092	.97
Texas	31,447	1.85	10,397	5.43	13,980	3.74	4,240	3.78
Total	53,526	3.15	18,263	9.54	25,010	6.70	6,619	5.90
Mountain								
Montana	1,631	.10	705	.37	560	.15	187	.17
Idaho	6,467	.38	692	.36	451	.12	207	.18
Wyoming	617	.04	343	.18	480	.13	107	.09
Colorado	16,941	.99	1,966	1.03	4,395	1.18	1,349	1.20
New Mexico	91,733	5.39	1,008	.53	2,448	.65	252	.22
Arizona	6,422	.38	1,581	.82	5,434	1.45	428	.38
Utah	8,960	.52	992	.52	3,161	.85	325	.29
Nevada	13,311	.78	408	.21	210	.05	240	.21
Total	146,082	8.58	7,695	4.02	17,129	4.58	3,095	2.74
Pacific								
Washington	19,160	1.13	2,984	1.56	4,827	1.29	1,383	1.23
Oregon	10,499	.62	1,871	.98	2,934	.78	749	.67
California	500,478	29.40	18,084	9.45	42,272	11.30	10,535	9.39
Alaska	5,853	.34	250	.13	80	.02	81	.07
Hawaii	2,673	.16	701	.37	761	.20	293	.26
Total	538,663	31.65	23,890	12.49	50,874	13.59	13,041	11.62
Grand Total	1,702,053	100.00	191,334	100.00	372,657	100.00	112,216	100.00

*Includes District of Columbia

[1] *Statistical Review of Research and Development*, Report of the Select Committee on Government Research of the House of Representatives, 88th Congress, House Report No. 1940, Tables 1 through 8, U. S. Government Printing Office.

[2] *Estimates of the Population of States by Age: July 1, 1963, with Provisional Estimates for July 1, 1964*, Current Population Reports, Population Estimates, Series P-25, No. 294, November 5, 1964, Bureau of the Census, U. S. Government Printing Office.

[3] *Enrollments for Advanced Degrees First Term, 1962-63*, U. S. Office of Education, U. S. Government Printing Office.

[4] *Annual Report* U. S. Department of the Treasury, Fiscal Year 1964, U. S. Government Printing Office.

Other Research Interests

In the past, federal government research and development expenditures tended to fall in two major categories: those related to the defense needs of the nation, (including atomic research and space exploration), and those related to basic research support in the health professions and in the natural sciences (physical and biological sciences) and engineering. In 1955 the federal government began a small-scale effort at support of university research in the field of teacher education and general university instruction. Now, under the Elementary and Secondary Education Act of 1965 an expansion of research activity in teacher education through the establishment and operation of regional educational research laboratories has been authorized.

The staff of the Board has found a great deal of concern in Ohio about the absence of extensive research activity in the field of teacher education. Here is a major university instructional program without any organized research support, and here is a major field of expenditure by state and local government without substantial research backup.

The Board of Regents has taken steps to seek the location of a regional educational research laboratory in Ohio under the joint auspices of the colleges of education of all the state-assisted universities. State government support of such a laboratory is also desirable.

Under another federal law enacted in 1965, the National Foundation for the Humanities and Arts Act of 1965, universities may now seek financial support for research and creative activities in the humanities from a federal government agency. Although funds available for this purpose are somewhat small, the present law represents a beginning of federal financial assistance in this particular field of university interest.

Ohio Agricultural Research and Development Center

In the past the State of Ohio has maintained only one state-operated research installation, the Agricultural Experiment Station in Wooster. This was renamed by the 1965 General Assembly as the Ohio Agricultural Research and Development Center. This Center is governed by a Board of Control which under the provisions of Section 903.01 of the Ohio Revised Code consists of the Director of Agriculture and the members of the Board of Trustees of The Ohio State University.

The Ohio Agricultural Research and Development Center is organized as a separate entity apart from The Ohio State University which operates a College of Agriculture. Yet the two activities are closely interrelated, as is acknowledged by the arrangement whereby the trustees of Ohio State serve *ex officio* as members of the Board of Control of the Center. In addition, the Board of Control has appointed as director the dean of the College of Agriculture. In addition, many of the scientists on the staff of the Agricultural Research and Development Center hold faculty rank in the College of Agriculture, while several faculty members of the College hold research appointments at the Center. No dual compensation is involved in these arrangements, the salary of joint staff members being shared by the College and the Center, or in some instances joint staff members serve without compensation in one of their assignments. These arrangements, except for membership on the Board of Control, are informal and might be terminated at any time. At the same time, present arrangements attest the close working relationships which do and should characterize the activities of the College of Agriculture of Ohio State and the Ohio Agricultural Research and Development Center.

The Agricultural Research and Development Center has received an appropriation of $2,868,000 for current operating purposes for each year of the 1965-67 biennium from the General Assembly. In addition, the Center receives a smaller amount from general support from the federal government, supplemented by additional federal agency grants for specific projects. Research support is also obtained from business and industry grants. State support has been about half or more of the total operating expenditures each year for the Center. Capital plant has also largely been provided by the State of Ohio.

Various suggestions have been made from time to time about a close working relationship between the Agricultural Research and Development Center and the College of Agriculture. Ohio is the only state where the two agencies function under different boards, even though membership on the boards is almost identical. It has been suggested that the entire College of Agriculture might be moved from the Columbus campus of Ohio State to the Wooster campus of the Center. This would require a substantial capital investment in order to reproduce the present facilities of the College of Agriculture and would separate the instructional program of the College from the other instructional programs of the University.

It has been suggested that the Board of Control of the Center should be abolished and its functions assigned to the Board of Trustees of The Ohio State University. Such a move would be essential if the College of Agriculture were to be moved in location. In the absence of plans to move the College of Agriculture, the impetus for a change in organizational arrangement is greatly reduced.

One factor in the present situation does appear to be certain. A close working relationship between the Center and the University is most desirable. This need is recognized by the legal provisions establishing the Board of Control of the Ohio Agricultural Research and Development Center. This need is recognized by the arrangements for administration and staffing of the Center and the College of Agriculture. The primary requirement at the present time would appear to be the desirability of further strengthening the mutual working relationships of the Center and the College of Agriculture.

In effect, the Agricultural Research and Development Center should be considered to be the research arm of The Ohio State University in agricultural research and development activity. It seems desirable for all senior instructional personnel at the College to hold staff positions at the Center and for all senior research staff at the Center to hold instructional positions in the College. There should be some interchange of primary assignments from time to time. Research and experimental work should be carried on primarily at the Center. Instructional work should be carried on primarily in Columbus. This arrangement will necessarily occasion some inconvenience because of physical separation, but road and air transportation facilities now have reduced the seriousness of this circumstance.

The Ohio Agricultural Research and Development Center should also build up its facilities and program for conferences and demonstrating which will provide essential research and operating information to farmers, to food and fiber producers, and to others engaged in agriculturally related businesses. Furthermore, the Center needs an active program in conjunction with local groups in the Wooster area to encourage agriculturally related businesses to locate their food and fiber technical centers adjacent to the Center.

Ohio agriculture is a one billion dollar annual business and agriculturally related businesses in Ohio (other than food distribution) have annual gross sales amounting to five billion dollars or more. This is an important segment of the Ohio economy. It is a segment which has advanced substantially in the past as a result of agricultural research and development. It is a segment whose further growth and prosperity depend upon future agricultural research and development.

General Observations

Factual inquiry has revealed that there has been a tendency for federal government support to go to a few universities, and for federal research and development expenditures to be concentrated in a few states.

Recent data show that 40 percent of all federal research and development funds going to universities are directed to just ten institutions, and that 90 percent of federal research and development funds going to universities are concentrated in 100 universities.[11] The ten leading universities in the expenditure of federal research funds are the University of California, Massachusetts Institute of Technology, Columbia University, University of Michigan, Harvard University, University of Illinois, Stanford University, University of Chicago, University of Minnesota, and Cornell University. These same ten universities conferred 31.5 percent of all doctors' degrees awarded in the United States between 1960 and 1963, and they had on their faculties 54 percent of all members of the National Academy of Sciences.

Of the top ten universities in terms of federal government research and development funds, four were located in the states of Massachusetts and New York, two in California, and four in the Middle West (two in Illinois and one each in Michigan and Minnesota). For some reason, California Institute of Technology was omitted from this listing; if its federally financed projects had been included, the role of California in university research would have been even more important.

In a listing of research activity at 121 institutions in 1963, *Industrial Research* included only seven institutions in Ohio with a total expenditure of just under 28 million dollars. (See Table 28) The combined expenditures of the University of Michigan and Michigan State University came to 52.5 million dollars, the combined expenditures of Indiana University and Purdue University to 27 million dollars, the combined expenditures of the University of Illinois and the University of Chicago to 210 million dollars, the expenditures of the University of Wisconsin to 29 million dollars, and the expenditures of the University of Minnesota to nearly 20 million dollars. The expenditure of almost 28 million dollars by seven Ohio institutions was just two percent of the total outlay of the 121 universities reported in this survey.

The annual report of the National Science Foundation for 1963-64 lists 32 institutions which receive one million dollars or more in basic research grants that year. The University of California at Berkeley led the list with total grants of more than four million dollars, and second on the list was the University of Illinois. The next three institutions were Harvard, Wisconsin, and M.I.T.

[11] Cf. Victor J. Danilov, *Trends in University Research, Industrial Research,* April 1964, p. 30; and D. S. Greenberg, "Grant System: Elliott Committee Finds Flaws, Diversity in Study of Practices of Federal Agencies," *Science*, vol. 165 (21 August 1964), p. 795.

TABLE 28

Research Expenditures of Ohio Universities
1963

Institution	*Dollar Volume*	*Percent Federal Funds*
The University of Akron	$ 500,000	67
Case Institute of Technology	4,400,000	61
University of Cincinnati	5,000,000	68
University of Dayton	3,300,000	85
The Ohio State University	14,000,000	77
Ohio University	345,000	69
The University of Toledo	300,000	70
	$27,845,000	

Source: *Industrial Research*, April, 1964, pp. 32-35.

There was not a single institution in Ohio on this list of those receiving one million dollars or more basic research grants that year.

It seems apparent from these data that the educational institutions of Ohio have not played a major role in the growth of research and development activity supported by the federal government. In part, this situation may result from the fact that universities in Ohio have not been heavily involved in research or development work for the Department of Defense, the Atomic Energy Commission, and the National Aeronautics and Space Administration. As we have observed, it is these three agencies which provide the bulk of federal government funds for research and development.

Various studies have also shown a high degree of concentration of federal government research and development funds in a few states. In June, 1962, Mr. Roswell L. Gilpatric, Deputy Secretary of Defense, issued a report entitled "The Changing Patterns of Defense Procurement." This report presented data to show changes between military procurement for three years in World War II (fiscal years 1942-1944), one year of the Korean War (fiscal year 1953), and one year at the beginning of the 1960's (fiscal year 1961). In World War II, 40 percent of military procurement was made up of tanks, mobile artillery, ground weapons, and ammunition. By 1961 this category had fallen to only 12.4 percent of all military procurement. Aircraft procurement had remained fairly constant as a percentage of military buying, being somewhat larger proportionately in 1953 than in World War II or in 1961. On the other hand, the great increases in military procurement had come in the fields of missiles and of electronic communication and guidance systems. Whereas there had been no military procurement of missiles in 1942-1944, this category had become 33.6 percent of all military procurement in 1961; and electronic systems which were 6.6 percent of military procurement in World War II were 18 percent of military procurement in 1961. Such changes as have taken place in military procurement since 1961 have undoubtedly been in the direction of further outlays for missiles and electronic systems.

In terms of geographical areas engaged in military production, the Gilpatric report revealed that nearly one-third was concentrated by 1961 on the Pacific Coast, and another 30 percent was concentrated in New England and Middle Atlantic states. The share of the Middle West in military procurement fell from 27 percent during the Korean War to 12 percent in 1961.

When it came to research and development activity, in the fiscal year 1961 over 41 percent of these contracts by the Department of Defense was with companies and universities in California, 12 percent with companies and universities in New York, and six percent with companies and universities in Massachusetts. Only 2.3 percent of all Department of Defense research and development contracts in 1961 was made with companies and educational institutions in Ohio. Insofar as field of effort was concerned, 65 percent of defense research and development went for missiles and 15 percent went for electronics and communications.

The Department of Defense pointed to the inter-relationship between the research capabilities of outstanding universities and the geographical location of corporations producing missiles and electronics gear as the explanation for the concentration of both procurement and research and development on the East and West Coasts. The Middle West also had outstanding universities, but the Middle West has lacked a combination of outstanding universities and large industrial companies working in the missile and electronics fields.

There are disadvantages in regional concentration of economic enterprise upon defense-related procurement. Such regions may experience definite problems in the re-allocation of economic activity in response to changing needs of defense agencies for weapons and communications systems.

On the other hand, defense economic enterprise also results in new developments in products and production processes for the civilian economy. To the extent that this does occur and such developments are exploited in the region where they are first explored, then a region or a state does gain distinct economic advantage from the location of defense procurement activity.

It is apparent that Ohio universities might well give more attention to their research interests and activities. The volume of federally financed research projects should be doubled as soon as possible. The proportion of federal research funds going to universities in Ohio should be more nearly proportionate to the state's importance in population and income. This can only be achieved by a substantial improvement in the quality of university facilities and faculties. This in turn will depend upon additional state government support of higher education. The State of Ohio has much to do to achieve the level of excellence in graduate study and research that it needs and must have if it is to continue to advance intellectually and economically.

CHAPTER 6

SPECIAL PROBLEMS

Libraries

The library facilities of each university, college, or branch campus are of great importance to the success of various instructional programs. Unfortunately, the consultants report that the library resources of state assisted institutions have not kept pace with the enrollment expansion which has already occurred in these institutions. The deficiencies of the past as well as the needs of the future require special attention.

Library needs are of two kinds. First, there is the need for an adequate physical facility to house the collection of books, periodicals, and documents used by students and faculty, and to provide required reading room space in which students and faculty may carry on their studies and research. Secondly, there is the need for an adequate collection of books and other publications and an adequate staff to service the reading demands of the institutions.

Fortunately, various steps to improve the library space situation at many of the state-assisted universities have been taken in the past two years. Many classroom buildings have included reading rooms to supplement those available in a central library. New library buildings are in process of construction on several campuses. Old buildings are being improved. In addition, as operating support of public institutions is increased, improvements are taking place in book collections and in library service. It is hoped that all of these various improvements will continue in order that the library services may soon be more adequate at state assisted institutions.

The consultants have considered various quantitative standards as a basis for establishing planning guidelines for adequate library facilities and library service at the state-assisted institutions. It is suggested that no single set of quantitative standards should be regarded as absolute, but that some adaptation to local circumstances and conditions is needed in every case.

The Standards for College Libraries published by the American Library Association call for a seating capacity of at least one-third of the student body of a four-year undergraduate program. For junior colleges the standard of 25 percent has been proposed. In some programs, such as that of a law school, the seating need is even greater. In some universities the requirements for seating capacity are estimated to be as high as 50 percent of the full-time student body. Under present circumstances a standard of seating capacity equal to one-third of the total number of full-time equivalent students in a university would not be unreasonable.

A second space factor is the desirable number of volumes which should be held in a library. It has been suggested that 20,000 titles constitute the "threshold adequacy" for a reading library in a community college or a two-year university branch. In some Ohio planning a figure of 40,000 volumes has been used for university branches, including duplicates, periodicals, and some documents. Requirements for upper division work and graduate study substantially increase these figures.

Another factor which needs to be introduced into library calculations is that of faculty use. Ordinarily, faculty members will desire study carrels, and similar facilities are needed for graduate students. Faculty use will also add to the needed size of the library collection of books, periodicals, and documents.

Reading room space, study carrel space, and collection space must be translated into square feet of floor space. Standards suggested by the consultants on space needs provide that 25 square feet per person accommodated are desirable for student reading rooms, 35 square feet per person accommodated are desirable for carrel space, and one square foot per 12 volumes is desirable for stack space.

The library consultants have made certain calculations for what they term "threshold adequacy" of library collections held by a senior college or university. These calculations begin with a basic undergraduate reading collection of 42,000 volumes (35,000 titles), 3,750 volumes of periodical literature (250 titles), and 5,000 volumes of documents. To this basic collection they add 60 volumes for each full-time equivalent faculty member, 10 volumes for each full-time student (undergraduate and graduate), 12 volumes for each undergraduate student in an honors or reading program, 240 volumes for each major field of study offered by the institution, 2,400 volumes for each field of master's degree study, and 18,000 volumes for each field of doctoral degree study. These figures are for volumes of books, including duplicates. Additional volumes are suggested for periodicals and the documentary collection.

The results of these calculations for a number of universities are shown in Table 29. It is evident from these data that as of 1963 none of the state assisted universities in Ohio had an adequate library collection under this formula.

For a two-year program our consultants suggest a basic collection of 15,000 volumes (12,000 titles) plus 1,875 volumes of periodicals (125 titles). To this should be added 36 volumes (30 titles) for each full-time equivalent faculty member, four volumes for each full-time equivalent student, and 120 volumes (100 titles) for each field of study offered beyond the standard general education program. These calculations have not been applied to the actual holdings of community colleges and university branches in Ohio since data were not available as of 1963 for these institutions.

TABLE 29

Library Collection Required by Formula Calculation Compared in Size with Actual Collection for a Number of Senior Colleges and Universities

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A									
Illinois	3,150	30,275	3,025	200	125	60	2,683,000	3,635,000	+35
Michigan	1,800	22,000	2,200	130	90	66	2,456,000	3,250,000	+32
UCLA	1,500	18,000	1,800	80	70	39	1,634,000	2,000,000	+22
North Carolina	900	10,000	1,000	70	50	33	1,257,000	1,350,000	+7
B									
Oberlin	215	2,370	600	25	10	—	147,000	900,000	+512
Swarthmore	110	975	250	20	10	—	114,000	245,000	+115
Antioch	100	1,725	430	20	1	—	96,300	129,000	+34
C									
Bowling Green	300	9,300	930	60	30	1	340,000	236,000	—31
Central State	90	2,200	220	25	2	—	103,000	65,000	—37
Kent State	500	13,300	1,330	100	55	5	600,000	268,000	—55
Miami	375	9,600	960	90	60	2	477,000	412,000	—14
Ohio State	2,200	30,660	3,066	165	100	62	2,555,000	1,670,000	—35
Ohio University	470	11,400	1,140	85	55	5	567,000	360,000	—37
Akron	240	4,700	470	34	16	2	246,000	195,000	—21
Cincinnati	900	14,400	1,440	70	45	29	1,202,000	865,000	—28
Toledo	300	5,360	540	50	30	3	333,000	200,000	—30

Column 1: A—universities; B—colleges; C—Ohio state-supported institutions of higher education.
Column 2: Faculty (full-time equivalent).
Column 3: Students (full-time equivalent).
Column 4: Honors students; actual for Oberlin, Swathmore and Antioch; estimated at 10 per cent of total student body for other institutions.
Column 5: Fields of undergraduate concentration—"major" subject fields.
Column 6: Fields of graduate concentration—master's work or equivalent.
Column 7: Fields of graduate concentration—doctoral work or equivalent.
Column 8: Size of collection as calculated by formula.
Column 9: Actual size of collection.
Column 10: Difference between columns 8 and 9 as a percentage of column 8. Plus indicates that actual collection is larger than required by the formula; minus that it is smaller.

Source: Academy for Educational Development.

The consultants have also provided us with data about the ratio of students to each single professional member of the library staff and to each single member (professional and non-professional) of the library staff at selected colleges and universities. These data exclude the student assistants who may be employed in the library of the various institutions. These data are shown in Table 30. Again, these data indicate that state-assisted universities in Ohio tend to have a higher student ratio per library staff member than other institutions selected for comparative purposes.

Finally, one other possible standard for library

TABLE 30

Ratio of Student Body to Library Staff* Selected Institutions

	Ratio of Students to Professional Staff	Ratio of Students to Total Staff
Selected Universities		
University of California (Berkeley)	164	70
University of California (Los Angeles)	170	76
University of Michigan	191	72
University of North Carolina	195	92
University of Illinois	227	116
University of Wisconsin	343	168
Indiana University	422	196
Pennsylvania State University	469	193
Wayne State University	769	189
Average	328	130
Selected Colleges		
Swarthmore	83	46
Oberlin	139	53
Antioch	219	130
Average	147	76
Ohio State-Assisted Institutions		
Bowling Green	840	525
Central State	301	162
Kent State	688	321
Miami	731	370
Ohio State	428	154
Ohio University	1,032	419
Akron	488	313
Cincinnati	880	322
Toledo	1,038	396
Average	714	331

Source of Data: U. S. Office of Education, *Library Statistics of Colleges and Universities, 1962-63, Institutional Data* (Washington: U. S. Government Printing Office, 1964). *Supplement* (Chicago: American Library Association, 1964).

Source: Academy for Educational Development.

service should be mentioned. The American Library Association suggests that five per cent of the educational and general budget of a university should be devoted to support of the library program. In Ohio the standard chart of accounts is based upon an "instructional and general" expenditure program rather than an "educational and general" category. In 1965-66 the budget plans of all state-assisted institutions indicated the intention to spend from 3 per cent to 5.4 per cent of instructional and general outlay for library purposes (staff service and current book purchases). Only three out of twelve institutions planned to spend more than five per cent for this purpose, while another four planned to spend around four per cent for this purpose. In general, five per cent seems to be reasonable and desirable proportion of instructional and general expenditures devoted to library purposes.

The consultants have given considerable attention to possible economies in library operations. We are informed that no substantial savings can be achieved from a cooperative program of book purchasing. On the other hand, economies can be realized from avoidance of duplication in the purchase of little used periodicals or volumes. It has been recommended that librarians of state-assisted universities should exchange information about their acquisition programs and should avoid duplication of little used material. It is also reported that no appreciable savings are likely to be obtained at the present time from arrangements for the centralized processing—classification, cataloguing, labeling, and book pocketing—of book acquisitions. This situation, however, should be reviewed from time to time.

The consultants state that the expense of library service cannot be reduced to any important extent by any of the currently available systems of miniaturization. There are some savings to be realized from the microfilming of newspapers and some periodicals. This operation is already a fairly common practice in several libraries of the state-assisted universities. Attempts to microfilm or microprint books are quite expensive and do not achieve any economy unless a sizeable number of institutions share the cost.

The total number of books maintained in a library can be reduced by weeding, but the process itself tends to be expensive. The process requires a periodic survey of the book collection, a determination that any particular book or collection of volumes is little used, an adjustment of the catalogue record, and disposal of the material. A continuing weeding program is essential to economical library administation, and this is being practiced in several of the state-assisted universities.

In recent years a great deal has been said about the possibilities of automation in library service. Various library activities have been examined for automatic operation: book ordering, the print-out of catalogue cards, book circulation arrangements, and even information retrieval. Electronic data processing equipment is extremely useful in handling repetitive clerical data. The computer is useful in providing mathematical calculations on a rapid basis. At the present time there are only a few library operations which lend themselves to data processing, and these are feasible only in a very large library. The whole matter of automation in library activity is still in a very early stage of exploration, and the development of techniques and equipment has not yet made much advance. State-assisted universities should remain alert to opportunities for improvement in library service through automation when the technology for such improvement is developed.

Finally, there is the whole matter of interlibrary cooperation and sharing of resources. The sharing of resources requires a central or union catalogue. Western Reserve University has performed such a service for about 34 libraries, including most of the state-assisted university libraries. In the year ending June 30, 1964, some 21,539 inquiries were addressed to this catalogue. We are also informed that a lack of staff prevents a prompt response to these inquiries. Once a volume is located through a union catalogue, it is then necessary to arrange an interlibrary loan. Recent data indicate that the state-assisted university libraries lend and borrow around 7,500 volumes a year. Such lending and borrowing involves significant cost, the consultants estimating that expense is likely to be around $2.50 to $3.00 a volume.

The Ohio College Association has had the subject of library cooperation under study for several years. It has been recommended by the association that all member institutions cooperate in the development of a library center to operate a union catalogue and to perform various services for the library of each institution. Thus far, little has been accomplished because of cost limitations and because of difficulties in defining just what central services it may be desirable to develop on a cooperative basis.

The consultants recommend that the Board of Regents sponsor the establishment of an office for library cooperation to promote cooperative activity among the state-assisted universities in Ohio. This office would serve to plan desirable cooperative services, guide a coordinated program of acquisitions, recommend a consolidation of scattered materials, devise procedures for weeding out little used materials, and improve arrangements for interlibrary loans. Such an office would be attached to one of the universities and would operate under the direction of a council or committee of librarians.

Educational Radio and Television

For some time there has been a good deal of interest in Ohio in the development of facilities and programs for educational radio and television. Beginning in the 1930's many of the state-assisted universities in Ohio set up radio stations, usually FM stations, to broadcast radio programs in their local area. Often this activity was an adjunct of the instructional program in speech, and the intended audience was generally the campus student body and such adults of the community as might be interested. The programs usually consisted of dramatic presentations, public affairs discussions, and music. This radio activity served both to supplement classroom instruction and to provide adult education in cultural and public affairs.

In 1952 the Federal Communications Commission established a new kind of broadcasting license for television, a non-commercial educationl television license, and reserved some 259 channels (87 in the VHF and 172 in the UHF bands) for the use of schools, colleges and universities, and special educational agencies. From this time on there was considerable effort expended in Ohio to develop educational television stations.

In 1953 the Ohio General Assembly directed the Legislative Service Commission to make a study of educational television needs in the state. A report was published in 1955.[1] This report pointed out that there were five principal functions possible for an educational television station or system:

1. Classroom instruction
2. Adult education for credit
3. Out-of-school telecasting for students
4. General adult education
5. General cultural programming.

The 1955 report concluded that there was need in Ohio for development of a state policy on the need for education through television, on programming arrangements to meet this need, and on financing of capital construction and of current operations for educational television.

In the meantime, individual efforts to experiment with educational television began. These efforts were of two kinds. In large cities arrangements were set up for non-profit television stations in large part supported by the public school systems of the area, with programming oriented toward meeting public school instructional needs. The first of these agencies was the Greater Cincinnati Educational Television Foundation, established in 1954. This was followed by the Newark Board of Education in 1959, the Greater Toledo Educational Television Foundation in 1960, and the Educational Television Association of Metropolitan Cleveland in 1965. Secondly, individual state-assisted universities began to set up their own educational television facilities. Ohio State was the first of these in 1954, followed by Miami in 1956, Bowling Green in 1960, Akron in 1961, and Ohio in 1964. In some instances the university television facilities were confined to close circuit only, while in other instances open transmission was also utilized.

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[1] Ohio Legislative Service Commission, *Educational Television in Ohio*, Research Report No. 7 (March, 1955).

In every instance the foundations or institutions found their own sources of financing. The State of Ohio did not appropriate any capital improvement funds as such for education television. Gifts and grants and general appropriations for capital plant were utilized to build up these educational television resources.

The 103rd General Assembly in 1959 passed legislation creating the Ohio Interim Educational Television Study Commission. This Commission was to consider the feasibility of establishing a statewide educational television network "whereby the educational television programs, station facilities, and channels, now in use or obtainable, may be made available to every Ohio citizen in and out of school." This Interim Commission submitted a report to the General Assembly in February, 1961.[3]

This 1961 report pointed to the rapid increase in enrollment which schools and institutions of higher education had been experiencing, to the shortages of qualified teachers which were being encountered, and to the potentialities of educational television as an instructional medium. The report pointed to the four educational television stations then in existence and mentioned that four others were in the process of development (The Ohio University, The Bowling Green State University, Newark, and Cleveland). Moreover, The Ohio State University had moved to classroom instruction by means of educational television.

The 1961 Interim Commission report recommended that legislation be enacted to create a permanent network commission and that funds be appropriated with which to establish a network. This Commission, with representatives from schools and institutions of higher education, was to be an independent agency with authority to establish its own procedures and to own and operate educational transmission and interconnection facilities. The new Commission, moreover, was to have authority to determine the programs to be distributed by means of the network.

These recommendations resulted in 1961 in the enactment of Chapter 3353 of the Ohio Revised Code creating an Ohio Educational Television Network Commission of nine members, one of whom ex officio is the State Superintendent of Public Instruction. The other members are appointed by the Governor with the advice and consent of the Senate for four-year terms. Commission members serve without pay. The Commission is an independent agency of state government attached to the Department of Finance "for administrative purposes only." In 1965 the General Assembly added the Chancellor of the Board of Regents to the Commission and increased the total membership to 11 persons.

Under the statute the Ohio Educational Television Network Commission may own and operate transmission facilities and interconnection facilities or may contract for transmission facilities for an educational television network; establish standards for interconnection facilities; enter into agreements with educational television broadcasting stations for transmission of identical programs simultaneously or through transcription tapes; enter into agreements with educational television production centers and broadcasting stations for the production and use of programs; and determine programs to be distributed through the Ohio Educational Television Network.

Since 1961 no appropriations have been provided with which to build an educational television network in Ohio. The Network Commission has envisaged a phased development of additional transmitting stations which might be located in 18 places throughout the state. These transmitting stations would provide outlets for programs originating at The Ohio State University or one of the other producing stations. Microwave relay towers would also be needed to provide linkage between production centers and these transmitting stations. The cost of such a network system in terms of capital investment would be substantial.

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[3] *Report of the Ohio Interim Educational Television Study Commission to the 104th Ohio General Assembly*, February 15, 1961.

The consultants report that Ohio's state assisted universities have done a great deal in the development of television as an educational medium. Investment in television facilities has been only the beginning step of inter-institutional cooperation in television efforts. The consultants have recommended that the Board of Regents appoint an inter-institutional committee to review plans and to recommend policies in the development of educational television as a major instructional resource. The consultants have also indicated their opinion that plans for a statewide network are premature until long-range plans for programming have been worked out.

One of the complications in the efforts of the Ohio Educational Television Network Commission is the diversity of interests among educational television stations in Ohio. Four of these stations are primarily concerned with public school instruction. The four university stations with open transmission are concerned with university functions. These interests are not identical and in certain respects are quite divergent. Only in the general area of public affairs and cultural telecasting do the stations have similar concerns.

The state assisted universities have two quite different uses which they may make of educational television facilities. One use is for classroom instruction. The other use is for continuing education. There is, of course, a third use which is important but incidental to these other two. This is the education of students who may wish to make a profession in television production, either as producers or performers.

The staff of the Board of Regents convened a conference of officials of the state assisted universities in October, 1965, to discuss various aspects of educational television. From this conference a number of definite conclusions emerged. First, it was the consensus of university officials that instructional television had future usefulness only as a closed circuit operation. Faculty members do not wish to be exposed in their classroom activity to the general public. Furthermore, the problem of faculty rights to classroom performance does not arise when closed circuit television is employed. Secondly, it was agreed that an interchange of classroom instructional courses among universities is not feasible. Here again there are complications of faculty rights to their instructional activity and of curricular differences among institutions which prevent any effective interchange of activity. In the third place, it was agreed that instructional television could be effectively used between home campuses and branch campuses, but that here again the medium of communication should be closed circuit television. In the fourth place, there was general agreement that inter-institutional cooperation was highly desirable in the interchange of instructional materials and of continuing education materials.

Under current circumstances it seems clearly evident that classroom instruction of courses by state assisted universities will have to be handled by each institution individually and will have to be transmitted primarily by closed circuit television. The requirements of classroom television instruction need careful assessment. The faculty instructor should be a successful lecturer and a top scholar in his field. He probably should be relieved of any other instructional assignment. He must be provided adequate resources in visual and other illustrative materials. He must be given adequate time to prepare the course. He needs proper production assistance. And the lecture effort probably should be supplemented by small group discussion or laboratory activity. This kind of instructional procedure is expensive and it can be justified only when large numbers of students are to be instructed. For example, at Ohio State in the autumn quarter of 1965 ten courses were taught by television, reaching nearly 12,000 students.

The state assisted universities believe that it would be helpful to their classroom television instruction if some interchange of illustrative and other course materials could be arranged. For example, a major opportunity for cooperative effort exists in the field of classroom observation as a part of teacher education. An essential element of teacher education is to provide students with direct observation of elementary and secondary school classroom teaching. It is widely believed that such observation can be provided in large part through television. Furthermore, the observation situations televised by one university station might well be shared with other university stations. There are many other kinds of classroom materials which might similarly be exchanged among state assisted universities.

Beyond classroom instruction as such, educational television has its greatest opportunity for usefulness in the whole field of continuing education. At the same time, there is a basic limitation imposed by this circumstance, which is the restricted resources of the state assisted universities with which to carry on their continuing education activities. This subject of continuing education will be considered in more detail in the next section of this chapter. We may note here, however, that state support is not available for continuing education activities except for agricultural extension. As a consequence, the state assisted universities can undertake only such continuing education activities as they can finance from their instructional support or from nonstate support.

Continuing education has two separate phases: (1) continuing education in a particular professional specialization, and (2) continuing general education or continuing education in public and cultural affairs. Educational television offers some advantages for the first type of activity and is quite useful for the second. Continuing general education presents discussions on important public issues as well as discussions and performances of drama, music, poetry, literature, art, and dance. In many instances faculty members, public officials, and prominent citizens or artists have been willing to contribute their services for television presentations on public and cultural affairs. Continuing general education of this type has been the major activity of educational television in Ohio.

Under current circumstances, each state assisted university must decide for itself what it needs in educational television facilities for its instructional and continuing education programs, and what it can afford to support in the light of its current operating resources in the way of television production. These facility needs must then be included as an integral part of the capital plant planning of each state assisted institution, and the production activities must be planned as an integral part of current operating expenditures.

It would seem entirely appropriate for the Ohio Educational Television Network Commission to serve as a clearing house for the state assisted universities on their television activities and to arrange an interchage of instructional materials and of continuing educational productions among their television stations.

Cooperative Extension

The Cooperative Extension Service in Agriculture and Home Economics is organized as an activity entrusted to the authority and responsibility of the Board of Trustees of The Ohio State University. The dean of the College of Agriculture and Home Economics, under the President of the University, serves also as director of the Extension Service. A separate appropriation each biennium has been made for the operation of the Extension Service, and the entire program has been considered somewhat apart from the regular instructional activities of the state institutions of higher education in Ohio. The cooperative extension program is a public service activity of The Ohio State University, closely related to the University's instructional and research work in the field of agriculture.

The Cooperative Extension Service in the biennium 1965-1967 has received state appropriations in the amount of $1,656,000 each year for current operating purposes. This amount will be supplemented by certain federal grants-in-aid which are expected to be somewhat more than 2.5 million dollars in each year. In addition, various counties in Ohio supply as much as another one million dollars a year to assist the extension program. Thus, all sources of income will provide approximately five million dollars annually to carry on this activity. The Cooperative Extension Service has had a total staff of some 409 professional people.

In 1963 the Council for Reorganization of Ohio State Government made a number of far-reaching recommendations affecting the Cooperative Extension Service.[3] These recommendations were based upon certain findings of the survey study. First, the study pointed out that the number of farm families engaged in agricultural production in Ohio was declining and that many of these farms had become highly specialized operations.

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[3] Council for Reorganization of Ohio State Government, *Survey Report and Recommendations* (November, 1963), p. 144.

Secondly, it pointed out that the Cooperative Extension Service was working increasingly with rural non-farm units and even with urban families or with the agricultural processing industry. Thirdly, the survey pointed out that more public school and privately operated services were now available to farm families than was the case thirty or more years ago. Indeed, the report declared that the Cooperative Extension Service had become largely a "non-farm and urban service." The Council recommended that many services of the Extension Service be curtailed or given a new orientation.

As a result of this critical report on the Cooperative Extension Service, the Agriculture and Allied Interests Study Committee retained the Battelle Memorial Institute in Columbus to make a further "objective evaluation" of the extension program[4] The Battelle report, completed and published in July, 1964, concluded that a redefinition of objectives for the Cooperative Extension Service was desirable under present-day conditions. The study pointed out that counties which were largely or preponderantly urban in character had given new opportunities to county agents to undertake varied activities reaching youth, rural non-farm families, and marketing or processing units. The study made a number of proposals for change in extension services.

The consultants retained by the Board of Regents have not prepared any separate study or evaluation of the Cooperative Extension Service in agriculture and home economics. The staff of the Board of Regents has been informed by officials of The Ohio State University that the objectives and scope of the Service have been reviewed and more specifically defined. Area extension centers have been established to provide more specialized continuing education with an emphasis upon economic development. The work of the Service has been more closely integrated with that of the College of Agriculture and Home Economics. The program emphasis has been directed to agriculture and home economics and many activities not clearly related to education in one or the other of these fields have been discontinued.

Continuing Education

Continuing education is first of all a problem of definition. In their report, the consultants refer to "Higher Adult Education." This title recognizes an essential fact: that continuing education carried on by institutions of higher education is closely related to the higher educational function of colleges and universities.

For some time it has been clear that knowledge in many different fields of human interest is advancing at a phenomenal rate of accumulation. As a result, new emphasis has been placed on the fact that education acquired during four years of an undergraduate program and in the various graduate professional education fields must not be considered a static body of knowledge. Education is a life-long process, and education acquired at the undergraduate or graduate level of higher education must continually be brought up to date.

All of the publicly supported institutions of higher education in the State of Ohio accept continuing education as a public service responsibility which they seek to fulfill. Varying attention has been given to such continuing education, depending upon the resources which are made available for this particular activity. For example, in recent years the National Science Foundation has made a series of grants to colleges and universities in Ohio with which to operate summer institutes in mathematics and science which provide opportunity for upgrading the capabilities of high school teachers in these fields. The Office of Education has provided funds for summer institutes to benefit high school counselors and modern foreign language teachers. Some of this work is organized on a college-credit basis and some is organized without such credit.

Actually, many graduate education programs provided by Ohio universities have been established in order to provide additional educational opportunity for adults who find in their employment the need to expand or extend their educational background. The result is that many graduate courses, especially in teacher education and in business administration, have been provided at night so that part-time students may take advantage of these opportunities. While these are college-credit courses, the educational service thus rendered is in a sense one of continuing education.

Most of the public institutions of higher education in Ohio also provide short-course or noncollege credit programs in the nature of "refresher" training for various professional groups. These short courses or seminars have been provided in conjunction with the various departments and professional schools of the state assisted institutions.

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[4] W. L. Fishel, G. W. Collings, and O. Wilhelmy, Jr., *Final Report on an Objective Evaluation of the Present and Potential Structure and functions of the Ohio Cooperative Extension Service* (Columbus: Battelle Memorial Institute, 1964).

An outstanding illustration of the continuing education program is that undertaken by the College of Medicine of The Ohio State University through its medical education network. The College of Medicine has been able to link a number of hospitals throughout the state into an FM-radio network for weekly discussion and seminar sessions on various new developments in the field of surgery and the treatment of disease. Question and answer sessions are conducted by use of radio-telephone equipment. The increase in the number of doctors participating in this program has attested to the value of such a continuing education enterprise.

In 1965 the Board of Trustees of The Ohio State University announced its decision to build a continuing education center on the Columbus campus where conference groups could be housed and instructed. Moreover, The Ohio State University has recently created the position of dean of part-time and continuing education. These are certainly desirable developments.

The inquiry into adult higher education undertaken by the consultant is critical of the programs now in existence on the grounds that they are not so extensive, not so well organized, and not so well supported as in other states. The consultants state that continuing education is needed in professional fields, in cultural and intellectual areas of interest, in family and consumer affairs, labor affairs, and international affairs. The study also points out that the state universities offer only a limited number of credit courses at night for adults whose education has been interrupted or whose educational preparation for professional development has been inadequate. The report also points out that state university branches offer little in the way of short courses of a non-credit nature.

The consultants observe that citizenship training for civic literacy is almost completely absent from the programs of municipal and state universities with the exception of the program carried on by the Institute of Civic Affairs at The University of Akron. Programs in the field of cultural and intellectual affairs are also said to be limited, spasmodic, and inadequate. Programs in the field of family and consumer education are reported as underdeveloped, with the exception of the work done by the Cooperative Extension Service with rural families. Some of the state universities have cooperated with labor union leaders in providing summer institutes and labor education programs for labor leaders. A generally inadequate program was found to be available through the municipal and state universities in the way of short courses and seminars.

With the exception of Ohio University, the consultants found very little being undertaken to deal with problems of illiteracy and vocational rehabilitation as a part-time or adult education endeavor. It is not clear that this type of program should be undertaken by institutions of higher education, but certainly it is a responsibility of higher education to educate the teachers for such programs and provide instructional materials for such activity.

The consultants report also that very inadequate records of short course and seminar enrollments or attendance have been kept by the various institutions. It would seem desirable for such statistics to be kept on a more comprehensive and inclusive basis than in the past.

The consultants point out that no state funds have been appropriated for higher adult education except in the field of the Cooperative Extension Service. In a number of other states, general extension activities have been supported by state appropriations. The consultants state that 38 per cent of the general extension budget at the University of Wisconsin, 40 per cent at the University of Illinois, 24 per cent at the University of Oklahoma, 17 per cent at the University of Minnesota, 19 per cent at the University of Washington, and 28 per cent of the general extension budget at the University of Texas have been provided by state appropriations. In Ohio, with the exception of degree-credit courses for part-time students, all continuing education activities are required to be self-supporting.

The consultants declare that higher education in Ohio has not been provided a clear mandate or directive to extend its interest into the field of higher adult education. There is no provision in state law encouraging such activities, and there have been no recommendations from voluntary agencies in the state to extend this field of educational endeavor. Similarly, there has been no statewide committee or council to stimulate and direct adult higher education activities. The consultants recommend that such a council should be created in Ohio.

In 1965 the federal government enacted two pieces of legislation which will affect the continuing education activities of state assisted institutions. The State Technical Services Act of 1965 provides for grants to state agencies including universities with which to conduct conferences and workshops providing information about the research needs of industry and the research work of universities. This will be one kind of continuing education program. In addition, Title I of the Higher Education Act of 1965 provides federal government support for community service and continuing education programs by universities.

Apart from agricultural extension, the Board of Regents recommends that the only other support from tax funds which should be provided at this time for continuing education should be for the state's share in the technical services program. State assisted universities are urged to expand their continuing education activities, both those of a professional nature and those of a general education nature. The income for such activities, however, will have to come from charges to participants, and from other general income, supplemented by such federal grants as may be available.

Teaching Hospitals

One of the expensive aspects of medical education is the need to operate a teaching hospital as an adjunct of the instructional process. In the biennium 1965-1967 appropriations of $5,350,000 in the first year and of $5,565,000 in the second were necessary for the operation of The Ohio State University hospitals and the ancillary facilities. An amount of $500,000 in each year was earmarked for medical research. Similar operating costs may be expected when the Toledo State College of Medicine is operative. In the case of The University of Cincinnati, the city makes a substantial appropriation for operation of the teaching hospitals, which are managed by the University under contract with the city government.

There is no question about the need for a teaching hospital in conjunction with a medical instruction program. Much medical instruction can be provided only in outpatient clinics and in patient wards of teaching hospitals. Moreover, the medical student must have opportunities to observe operating techniques and the many other developments in modern therapy which can be provided only by hospital facilities. Much of the research which advances medical knowledge and techniques is also carried forward in a teaching hospital.

While the patient in a teaching hospital is subject to some discussion and analysis by doctors and medical students which do not confront the patient in other hospitals, the patient also derives an advantage from this attention. Ordinarily, the patient in a teaching hospital receives superior medical care, and the discussion of his case may even result in additional efforts to meet his medical needs. The patient in a teaching hospital is not an object of public display but is an individual upon whose illness all the resources of modern medicine and of modern medical techniques are concentrated for the benefit of both the patient and the instruction of future doctors.

In the past it was often considered that only charity cases should be used for teaching purposes. In a number of medical centers throughout the United States this position has now been abandoned. Moreover, many patients themselves have come to see that there are definite advantages to themselves in obtaining medical care at a teaching hospital.

When charity patients predominated in teaching hospitals, it was not unusual for the entire expense of patient care to fall upon the budget of the medical school. More recently, medical schools throughout the United States have undertaken to separate the operating costs of a teaching hospital from those of the medical school proper. The operating costs of the hospital as a physical facility, of patient feeding and treatment, of nursing care, and various other operating expenditures have been separated from the instructional and research expenditures of the medical school as such.

In addition, there has been an increasing tendency in the United States for medical schools operating a teaching hospital to seek to recover the operating expenses of the hospital from patients themselves or from welfare agencies. This effort has been made at the teaching hospitals of The Ohio State University.

As a general goal, it would seem desirable for the State medical schools in Ohio to seek to recover most of the operating costs of teaching hospitals from patients or from appropriate welfare agencies. This objective may not be realizable in a short period of time, but seems desirable as a long-range goal.

Student Assistance

In addition to the financial support provided publicly sponsored and assisted institutions of higher education, several states have inaugurated state scholarship programs of direct aid to students. Such states include New York, Pennsylvania, Illinois, and California. There are two reasons for such scholarship activities. The system of state assisted institutions may not always meet the economic needs of prospective students coming from very low income families. The state assisted institutions must still charge fees for instruction which the student must meet, and when the student resides on a campus he must meet the direct expense of such residence. Secondly, a state scholarship system may assist students to attend a privately sponsored college or university if he so desires, even though these institutions have customarily had to charge higher fees than the state-aided institutions.

It must be recognized that the system of state aid to institutions of higher education is in effect a state scholarship program, because it generally provides educational opportunity at lower cost to the student than would otherwise be the case. Moreover, the geographical dispersion of institutions helps greatly to increase educational opportunity. Only arrangements of this kind can hope to expand educational opportunity on a massive scale for the benefit of the great numbers of students now seeking a higher education. Few persons have ever proposed a state scholarship system of the magnitude of the current or prospective enrollments of higher education in Ohio.

The most extensive scholarship program among any of the states is the one now provided in New York. New York State set up it Regents' college scholarship program in 1913 with 750 scholarships to be awarded on the basis of the student's school record. The initial stipend was $100 annually. Under present law some 17,000 scholarships are awarded each year, a number which in 1964 was equal to almost nine per cent of the high school graduating class of the state that year. Each scholarship carries a variable stipend, the amount usually ranging from $250 to $700, depending upon the recipient's financial need. The award is limited to the cost of tuition and fees at a public or private college in the state. The award does not meet any living or other expenses of college enrollment. The total number of scholarship holders is expected to be around 70,000 a year and the total expenditure about 25 million dollars when the system is fully operative in 1965. Fellowship awards are also available for graduate study. The average of the fellowship awards is around $2,000. No other state has undertaken so extensive a scholarship program as that in New York.

The Board of Regents has recommended a Tuition Equalization Program for the benefit of high school graduates who are Ohio residents and who enroll in a privately sponsored college or university located in the state. This program, together with the program for expansion of publicly sponsored institutions of higher education, seems to meet the essential needs of the youth of this state by enlarging opportunity for higher education.

In 1961 the General Assembly enacted Chapter 3351 of the Revised Code, creating an Ohio Higher Education Assistance Commission to guarantee loans made to students attending institutions of higher education. The Commission is made up of nine members serving three-year terms. Two members must represent institutions of higher education, one must represent secondary schools, and three members must represent banks. The chairman is designated by the Governor.

The Ohio Higher Education Assistance Commission may guarantee the loan of money by a bank or other lending agency to persons attending or planning to attend a college or university and needing funds with which to meet the expenses of higher education, including graduate education. In order to be eligible for a loan, a person must be a resident of Ohio, and be enrolled or have applied for enrollment in an institution of higher education of his choice. No guaranteed loan may be for more than $1,000 a school year and may not be for more than $5,000 in total to any one person. The guarantee is for 80 per cent of the loan, and the interest may not be more than 5.5 per cent per year. Each guaranteed loan carries a special interest charge of one-half of one per cent (included in the 5.5 per cent above) per year which is paid to the Commission by the bank or other lending agency making the loan. This income to the Commission is intended to meet its operating expenses and to build up its loan guarantee fund. The total amount of outstanding loans guaranteed by the Commission may not exceed an amount 15 times the total assets of the loan guarantee fund. In the event of a default, the Commission pays the lending agency the amount of the guarantee and takes over the loan for collection purposes. Eventually, the Commission is supposed to repay the state General Revenue Fund the value of all appropriations to it.

As of June 30, 1965, the Ohio Higher Education Assistance Commission had received total appropriations of $390,999 for its investment and reserve fund account. The total assets of this account were almost $442,000 as of that date. The General Assembly appropriated another $400,000 to this loan guarantee account for the biennium 1965-1967. The current operating expenses of the Commission are to be met from the interest earnings of the investment and reserve fund account.

As of June 30, 1965, the Ohio Higher Education Assistance Commission had approved 8,882 out of 9,304 interim note applications submitted to it by commercial lending institutions and had approved 1,599 out of 1,703 payout note applications. The total value of all outstanding student loans amounted to $5,835,986. The average value of each individual loan came to $804. Up to June 30, 1965, there had been defaults on only nine loans for a total amount of $7,237. By the end of September, 1965, the value of all loans guaranteed by the Commission was in excess of $6,750,000, and the total number of loans guaranteed came to over 8,200.

The Ohio loan program appears to have real merit. The program is meeting an apparent need and is becoming increasingly well known. In some communities local banking and other lending institutions have been somewhat reluctant to participate in the program, partly because of the low interest rate of five per cent. On the other hand, the 80 per cent guarantee feature for these loans substantially reduces the element of risk in these student loans. The loan program may be expected to expand in the years ahead and will be most useful in helping to meet student assistance needs.

Retirement Arrangements

The State of Ohio maintains three retirement systems: the State Teachers Retirement System, the Public Employees Retirement System, and the School Employees Retirement System. The employees of state assisted institutions are covered for the most part by one of these three systems, although The University of Cincinnati has not elected to participate in the State Teachers Retirement System. The benefit structure of the three systems is comparable, but the boards of each system are free to adjust employee and employer contribution requirements in accordance with the requirements of each system. As of the end of 1965, the employer contributions of the State Teachers Retirement System were greater than those of the Public Employees Retirement System because the first system was experiencing a greater continuity of employment and therefore building up a larger liability for future benefit payouts.

The State Teachers Retirement System was devised primarily to serve the needs of the public school system of Ohio. It was not developed for the benefit of the state assisted universities, and its operations have not been oriented toward any of the special needs of the state assisted universities.

The benefit structure of the Ohio retirement systems has been recognized as quite satisfactory. At various times the General Assembly has made adjustments in the benefit structure, including action of this kind at the 1965 session. At the same time, the benefit arrangement is definitely geared to length of service in the state. An individual may retire at 55 years of age and draw benefits if he has had 25 years of service. An individual may retire at 60 or any age thereafter and draw benefits if he has had five years of service. Or an individual may retire at any age after 35 years of service. The annual benefit is based upon 1.75 per cent of the average salary for the *best* five years of salary, multiplied by the total years of service. If an individual retires before 65 years of age, he may draw only a proportion of this annual benefit (60 per cent at 55 years of age and 97 per cent at 64 years of age).

If a faculty member's best five years of salary have an average salary rate of $12,000, his annual retirement benefit at 65 years of age will be $210 times his year of service. Thus, obviously if he has 15 years of service his annual benefit would be $3,150, while if he had 30 years of service, his annual benefit would be $6,300.

It would seem to be appropriate for the State of Ohio to be considered as the career area for a public school teacher. Undoubtedly, there are teachers who obtain employment outside the state during their teaching career, but a considerable proportion of the career public school teachers in Ohio probably do complete their teaching career in one or another of the some 600 school districts of the state.

The consultants to the Board have expressed the opinion that the retirement systems as they now operate do not best serve the interests of the state assisted universities in the recruitment of faculty members and of top administrative personnel. Many of these individuals will not come into the state assisted universities until they are 40 or 45 years of age or even older. Such individuals may not have the benefit of 30 or 35 years of service which they need in order to obtain a desirable level of retirement benefit. Recruitment of senior faculty members from other states is thus hampered.

The academic "marketplace" at the university level is nationwide. It is not confined to a single state. Just as Ohio is eager to attract business concerns from all over the United States to locate production activities in this state, so Ohio's state assisted universities are eager to attract the best faculty talent available from various states for their instructional and research activities.

Many factors make a particular university attractive to scholars, such as instructional and research opportunity, institutional reputation, salary scale, available facilities, and location. The arrangement for retirement benefits is only one factor among many. Yet this is an important consideration, especially when senior personnel are being recruited. The opportunity afforded to such personnel to transfer their accumulated pension rights may be a crucial factor in such recruitment.

This circumstance is the more compelling because there is a nationwide system af faculty retirement established originally by Andrew Carnegie to aid colleges and universities in the United States and still operated as a non-profit enterprise. This agency is the Teachers Insurance and Annuity Association. Many state universities in the United States do provide for faculty retirement benefits through this Association, including five of the universities in the so-called Big Ten. In Ohio The University of Cincinnati meets its retirement needs through the TIAA. About 80 per cent of all privately sponsored four-year colleges and universities in the United States are members of the TIAA.

It should be noted that university contributions to the Ohio retirement systems are paid from general university operating funds, together with deductions from the pay of each employee. It would not be any more expensive to each state assisted university if it were permitted by law to offer the option of coverage for new faculty members and new academic administrators in either the State Teachers Retirement System or in the Teachers Insurance and Annuity Association. The comparative benefits which might be obtained by an individual under the two arrangements could then be the basis for his choice.

CHAPTER 7

ROLES AND MISSIONS OF STATE ASSISTED INSTITUTIONS

The State of Ohio has varied resources in terms of organizational arrangements for meeting public higher education needs. These organizational units include:

1. Area Technical Schools (if they voluntarily decide to meet higher education standards)
2. Technical Institutes
3. Community Colleges
4. University Branches
5. State Universities in Major Urban Areas
6. State Universities in Small Communities
7. The University of Cincinnati
8. The Ohio State University

It is important in discussions of higher education to differentiate between programs and organization. For example, technical education is a particular program of higher education. In organizational terms, technical education may be offered by at least four different kinds of units: technical schools, technical institutes, community colleges, and university branches. Another example is provided by the lower division or general education program. This program may be offered by community colleges, by the branches of state universities, by general colleges of state universities and by state universities on their residential campuses. The reason for having different organizational arrangements for the same type of program is to meet varying circumstances and needs which exist in different parts of the state.

It has been suggested that a standard organizational arrangement should be set up in Ohio for providing the desirable and needed instructional programs of the state. Such a standard or organizational arrangement might consist of these elements:

1. Community Colleges
2. Senior Colleges
3. Universites

Under such an organizational structure, community colleges would offer general education and technical education courses. In a large urban area such a community college might be a part of a state university. Senior colleges offering upper division programs would be parts of state universities. In addition, the state universities would contain graduate schools and appropriate graduate professional schools.

There is much to be said for the symmetry of such an organizational structure. If a planning agency were starting out to establish an organizational arrangement without any previous history, it might be useful indeed to organize various instructional programs in this way. In Ohio, however, there is a long history of colleges and universities, both those under private and those under public sponsorship. The organizational problem now before us is to adapt existing arrangements to the best of our ability so that they may meet emerging challenges: challenges of larger numbers of students, challenges of changing program needs, and challenges of enlarged graduate study. This problem of adaptation requires a variety of organizational arrangements which might otherwise not be necessary.

Technical Schools and Technical Institutes

One major organizational problem which has confronted the Ohio Board of Regents has been that of appropriate arrangements for offering technical education. In 1958 the federal government included a Title VIII involving federal grants for vocational and technical education within the National Defense Education Act. Under the impetus of this legislation, the State Board of Education in Ohio encouraged the creation of eleven technical schools throughout the state. This development, discussed in Chapter 3 occurred before the Board of Regents was established in 1963. These technical schools have made representations to the Board of Regents directly and through the State Board of Education indicating a desire on the part of some of them to be included within the structure of higher education. In order to make this possible, the Board of Regents endorsed and the 106th General Assembly enacted H.B. 619 which added Section 3333.10 of the Revised Code to the authority of the Board. This section provided that associate degrees might be approved by the Board of Regents for award by those schools meeting particular standards set by the Board.

It must be emphasized that no technical school is under any obligation to meet these standards.

Moreover, no technical school is required to be included in the organizational structure of higher education. The way has been opened, however, so that such schools may be an integral part of higher education if they so desire and if they meet the standards prescribed by the Board of Regents.

In 1961 the General Assembly of Ohio authorized the creation of separate organizations of higher education to be labeled technical institutes. Chapter 3357 of the Revised Code was extensively rewritten in 1963 during the same legislative session which created the Board of Regents. The Board has taken the position that a separate technical institute to provide a technical education program is justified in those circumstances where a need for technical education exists, where the need is not being met by existing or planned public or private institutions of higher education, and where existing public or private institutions of higher education do provide a general education program.

It is not expected that many such technical institutes will be authorized. If evidence does develop of an increased need for technical education programs and circumstances so warrant, additional technical institutes beyond those now contemplated may be created.

Under present law a technical institute is defined as an institution of education beyond the high school, organized for the principal purpose of providing a technical institute program or an adult education technical program not exceeding two years in duration and not leading to a baccalaureate. Such a technical institute may be established by a technical institute district. In turn, a technical institute district may be created by action of the board of education of a city school district, or by the boards of education of two or more contiguous county, city, exempted village, or local school districts. The creation of a technical institute district must be approved by the Board of Regents.

A technical institute district organized in this way is considered by law to be a political subdivision of the state and a body corporate with the legal authority thus conferred. The purpose of a technical institute district is to operate a technical institute, and the governing authority is a board of trustees. In the case where a technical institute district embraces the territory of one city school district or of one county, provision is made for seven trustees to be appointed; two by the Governor of the State, with the advice and consent of the Senate, and five by the board of education of the city or county. The term of all except the initial trustees is for a three-year period of time. In cases where a technical institute district embraces a territory of two or more contiguous school districts or two or more counties, nine trustees are to be appointed; three by the Governor, with the advice and consent of the Senate, and six by the trustees of the boards of education of all the districts involved. The law provides for a caucus of all board members of all school districts to select these trustees.

A technical institute district thus established must develop an official plan for operation of a technical institute. This official plan is likewise subject to approval by the Board of Regents. The law provides that the program of a technical institute shall be a post-high school curriculum planned to qualify students after two years of instruction to pursue careers of "immediate technical assistance" to professional or managerial personnel generally expected to hold baccalaureate or higher academic degrees in technical or professional fields. These technical and professional fields are defined as including, but not limited to, engineering and the physical, medical, or other sciences.

The law also provides for the acquisition of property, the establishment of student fees, the receipt of government funds, the granting of associate degrees, and other authority needed to operate a technical institute and a technical institute program. With the approval of the voters of the district, a tax levy may be authorized for the construction of facilities and for the support of the instructional program.

The Board of Regents is given certain instructions for the approval of an official plan of operation for a technical institute. The Board is required under the law to approve such an official plan and to issue a charter only upon a finding that the plan conforms to existing law, that the technical institute will not unreasonably or wastefully duplicate existing educational services available to prospective students, that there is reasonable prospect of adequate current operating revenue, that the proposed land and facilities will be adequate and sufficient for the program, and that there is a need for a technical institute program in the area. The Board of Regents is directed by law to organize an advisory committee to counsel the Board on matters involving the organization and operation of a technical institute, and the Board of Regents may establish rules, regulations, and standards concerning such matters as the qualifications of teaching personnel, and the quality and content of instructional courses. Beyond this, the Board of Regents is directed to review the budgets of technical institutes and make recommendations to the Governor for state support of technical institute operations, as well as to conduct studies of the operations of technical institutes. These provisions of law are quite comprehensive and indicate a fairly exact set of standards for operation and supervision of technical institutes.

Community Colleges

Chapter 3354 of the Ohio Revised Code constitutes the community college law of the State of Ohio. Under this law, a county or group of contiguous counties, having a total population of not less than 75,000 persons as determined by the last federal decennial census, may establish a community college district. Such a district may be established by action of the board of county commissioners by a two-thirds vote. Or the electors of a county by petition may seek establishment of a community college district.

A community college district is a political subdivision of the state and a body corporate. The district is headed by a board of seven trustees appointed by the board of county commissioners for five-year terms. The board of trustees is authorized to operate a community college. The board is required first to prepare an official plan indicating the need for and prospective enrollment of the college, a description of land and building needs, a proposed organization and program, an estimate of capital costs, and a prospective operating budget. Such an official plan is subject to the approval of the Board of Regents. If the plan is approved, the Board issues a charter creating and establishing the community college.

Under the law, a community college may operate an "arts and sciences program" of two years' duration which is expected to parallel the courses offered in the first two years by accredited colleges and universities in the state. After the conclusion of two years of study, the student may transfer to a four-year college or may terminate his academic study "with a proportionate recognition of academic achievement." In addition, the community college may offer a technical program and an adult education program. A technical program is defined as a "post-high school" curriculum intended to enable students to gain academic credit for courses designed to prepare students to meet the occupational requirements of the community. An adult education program is defined as one disseminating post-high school knowledge and service for the occupational, cultural, or general educational benefit of adult persons.

The law authorizes the board of trustees after receipt of the community college charter to take all of the usual and necessary actions to operate the college. The board may submit to the electors of the district proposals for the issuance of bonds for capital improvements, or it may request the electors to approve a tax levy on the general property of the district to be used for both capital improvement and current operating purposes.

There is no need here to review all the discussion or literature of recent years on the subject of junior or community colleges.[1] A great many persons have seen two major advantages to the community college: its location in a major urban area enabling students to attend on a commuting basis, and its special responsiveness to the particular educational needs of the community which sponsors it. Other considerations have also been advanced on behalf of the community college. It provides an "open door" to college study, generally enrolling any high school graduate regardless of his or her high school record. It gives personal attention to student needs and seeks through counseling to direct them toward college transfer or occupational curricula. It carries on an adult education program and may become a valuable cultural center for the community.

There are certain problems which have arisen in connection with the community college law. First of all, in contrast with the provisions of Chapter 3357 of the Revised Code on technical institutes, the Board of Regents has no authority to approve or disapprove the creation of a community college district. A great deal of effort and money may be expended in the preparation of a community college district and plan only to have the Board of Regents find upon subsequent review that some essential factor has been omitted from consideration. Under such circumstances the Board would have to reject the proposed plan. Secondly, much planning may be undertaken and then the community may not provide the necessary financial support. In the third place, local planning does not always effectively place the needs of the community in the context of the needs and resources of the state as a whole. The essence of the situation is that community college planning needs to be undertaken in close cooperation with state planning, and such cooperation ideally should begin in advance of a district's formal establishment.

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[1] Cf., for example, Burton R. Clark, *The Open Door College: A Case Study* (New York: McGraw-Hill Book Company, 1960); Leland L. Medsker, *The Junior College: Progress and Prospects* (New York: McGraw-Hill Book Company, 1960); Ralph R. Fields, *The Community College Movement* (New York: McGraw-Hill Book Company, 1962); and D. G. Morrison and S. V. Martorana, *Criteria for the Establishment of 2-Year Colleges*, Office of Education Bulletin, 1961, No. 2, OE-57000 (Washington: U.S. Government Printing Office, 1960).

The community college law in Ohio was not adopted until 1961 and then was rewritten extensively in 1963. This law is now found in Chapter 3354 of the Revised Code. When the community college law was written, the state universities had already developed a part-time or full-time branch system bringing higher educational opportunity into nearly 30 different urban areas of the state. One or two of these branches had been set up before World War II, and the remainder were established after the War in an effort to meet the so-called "veterans' bulge" in college enrollments, to supplement the cadet teacher education program for an emergency enlargement of the number of elementary school teachers, and generally to increase lower division enrollment capacity. These branches were developed without cost to the State of Ohio for capital plant or current operations.

Enthusiasts of the community college movement have urged upon the Board of Regents that a whole system of community colleges ought to be created in the State of Ohio. It has also been suggested that the Board of Regents should take the leadership in promoting such an arrangement. It must be presumed that this position also includes a proposal to abandon all state university branches, or at least to convert all of these branches into community colleges.

There are several objections which may be made to this proposal. Under existing law the Board of Regents has no specific authority to propose the creation of a community college. Only a local group of citizens or public officials in a county can propose the establishment of a community college. This local initiative is all the more important since local financial support is needed in order to build and operate a community college. The more important question, however, is whether a community college is preferable as an educational agency to a university branch. The enthusiasts for a community college are certain about the answer to this issue. There are others, however, who believe that a university branch is preferable to a community college. The relative merits of the two types of arrangements will be discussed a little later in this chapter.

The community college is undoubtedly a useful organizational element in a system of higher education. In Ohio, the effective role of a community college would seem to be one peculiar to certain special circumstances. The community college essentially provides two instructional programs, a general education program and a technical education program. In particular, a technical education program may be needed in a large urban area to augment the instructional programs of existing public and private institutions and to encourage youth to acquire some education beyond the high school which will improve their ability to contribute usefully to the employment needs of our society. Where such a special need exists, and a minimum enrollment of 1000 full-time equivalent students seems assured, a community college ought to be considered. The two community colleges in existence as of January 1, 1966, were established in response to just such special circumstances, and future community colleges should likewise be expected to fulfill clearly evident special needs.

University Branches

As has been mentioned, the state universities in Ohio established branches just before and just after World War II. In every instance these branches originally provided instruction only in the late afternoon and early evening hours, four nights a week. Usually a branch made use of high school facilities provided by a city board of education at nominal cost.

As of January, 1966, there were 34 branches operated by the state universities of Ohio, plus the Wright State Campus near Dayton which combined a branch of Miami and of Ohio State. These branches varied greatly in size, from 4,516 students on a head count basis at Wright State Campus to as few as 61 students in one instance.

The average size was around 700, and enrollment at all branches combined totaled 24,266 on October 1, 1965. These branches have grown rapidly in total enrollment, the total number of students served being 4,460 in 1955 and 10,993 in 1960.

The branch operations of the state universities have faced a number of problems. The instructional program has been carried on in high school facilities for the most part. The instructional staff has been made up largely of full-time faculty members from the central campus of the state universities. Thus branch instruction has been carried in many instances as a faculty overload. No state financial support of any kind for the current operating expense of state university branches was available until 1959, and even then the support was limited to an amount intended to equalize fee charges between branch and central campuses. Regular state support of all branch instruction began only in 1963.

Consultants to the Board of Regents found in general that these part-time branches were providing a satisfactory instructional program. These consultants called attention to the need for enlarged library resources and for more student advising, as well as for some further improvement in laboratory equipment and supplies.

In 1964 the Inter-University Council of Ohio presented the following statement of objectives for university branches:

1. To provide opportunity for higher education in urban areas close to a student's home for those persons who cannot be enrolled on a university campus because of limitations of housing, expense, need for part-time employment, or other factors.
2. To attract talent that might otherwise be lost to our colleges and universities and to give all high school graduates an opportunity to demonstrate in the college classroom their ability and motivation for college work.
3. To serve professionally employed persons, especially in the public schools and in business, who desire to improve their competency with additional higher education.
4. To provide courses for persons seeking to qualify for a certificate as a public school teacher.
5. To meet the growing enrollment demand in Ohio and to limit large enrollments on home campuses in order that campus facilities may be concentrated upon upper division, graduate, and graduate professional study.
6. To establish closer relationships between the universities and the various communities in the State which they serve.

It is evident from this statement that there has been some variety of purposes envisaged in the operation of state university branches. The present time seems to be appropriate for clarifying these objectives.

In 1964 and in 1965 the General Assembly provided funds with which to construct permanent facilities for branch instruction. In September, 1964, a new plant provided entirely by a local fund raising campaign was opened near Dayton. Three additional buildings were under construction on this campus as of 1966, and the branch campus is expected to become a separate state university as of July 1, 1967. Other branch projects underway as of January 1, 1966, included permanent campuses at Middletown, Lima, Mansfield, Chillicothe, Portsmouth, Zanesville, Belmont County, Canton, and Ashtabula. These facilities were expected to be available for instructional purposes as of September, 1966, or January, 1967.

In addition, plans were underway in January, 1966, for permanent branch facilities in Hamilton, Marion, Newark, Lancaster, Warren, New Philadelphia, and Sandusky. It is expected that these facilities will be available for instructional use in 1968. The universities of Akron, Cincinnati, and Toledo and The Ohio State University were also building facilities which would expand their capacity to accommodate commuting students.

Under these circumstances it is now time to give some more definite meaning to the term "university branch." It is proposed that "university branch" henceforth should mean a separate branch campus apart from a central campus and providing a two-year lower division instructional program on a full-time basis. A minimum enrollment of 1000 full-time equivalent students should be assured at such centers. It is expected that this lower division program will be similar to lower division course offerings on the central campus, and that students successfully completing the branch program will be eligible for admission to an appropriate upper division program on the central campus. It is also recommended that state universities adopt the practice of conferring the associate degree upon students who complete satisfactorily the lower division program at a branch campus. This practice will help to make branch campus programs more attractive to students, since it is not expected that such degrees will be conferred upon students admitted to residential status on a central campus.

In addition to offering the first two years of baccalaureate programs in the branches, in those instances where community needs warrant such offerings, programs of technical education may appropriately be established as well.

In the future, if a state university desires to operate a part-time (late afternoon and evening) program at some off-campus location, it is recommended that such an operation be designated an academic center. In general, it is expected that these academic centers will provide a lower division program, although in a few instances an academic center may be established to provide a part of the course requirements for a master's degree in teacher education and business administration.

The university branch thus becomes an integral part of the sponsoring university but located usually in a different urban area. The purpose of the university branch is to decentralize the lower division instructional activity of a state assisted university. The university branch is different from a community college. The university branch is tied to a parent university. Its instructional program and instructional standards are expected to be those of the parent university. The branch student is assured recognition of his course credits by the parent university.

Community Colleges vs. University Branches

The question has been raised from time to time whether the community college or the university branch is the preferable organizational arrangement for meeting an expanding student enrollment demand for higher education. This is not a simple question to answer. The fact is that the two organizations are different and can and should serve different purposes.

The community college is the organizational arrangement better suited to meet the needs of a large urban population where there is a special need for a two-year technical education program to meet local employment demand. It may help to meet local demand for a general education program. The community college can also serve as a cultural center in a community or area where other such centers are not available. The community college can help reduce the cost of higher education to the individual student by a county-wide tax levy to help meet current operating expenses.

The community college confronts certain difficulties in providing a lower division college transfer program. Its course offerings may not parallel those of a four-year institution. Its instructional standards may not be comparable to those of a four-year institution. Its staff may not have an opportunity to move into four-year and even graduate instruction. Only experience can demonstrate how important these difficulties may be in actual practice in Ohio.

The university branch has the advantage of providing general education courses which parallel those of the parent university. Even in technical education the lower division courses would be similar to those provided in a baccalaureate program in industrial technology. The standards of instruction would be the same. The opportunity for continuation in the upper division curriculum of the parent institution would be the same as if the student had enrolled on a central campus. The staffing of the branch would be handled through the appropriate departments of the parent institution, and the instructional staff would be considered an integral part of the parent university, with similar opportunities for promotion and for varied instructional assignments.

The principal disadvantages of the university branch as it would operate in accordance with this plan would be the higher fees charged the individual students—fees comparable to those on a central university campus but higher than a community college might charge with local tax support—and the lesser attention which may be given to local community employment demand for persons with a two-year education experience.

The university branch organization must be considered primarily as the response of the State of Ohio to the declared legal policy of open-access to higher education for all high school graduates. It is not feasible organizationally to fullfill this policy commitment without a university branch arrangement.

Staffing

The question has been raised whether Ohio's community colleges and university branches will be able to recruit the instructional staff needed to handle the greatly increased number of lower division students expected over the next fifteen years. Undoubtedly, the staffing problem will be troublesome. At the same time, a fear of staffing shortages seems an inadequate excuse to abandon or curtail plans to expand higher educational opportunity for Ohio youth.

There are several possibilites for expanding the instructional staff of community colleges and university branches. Both kinds of organizations might make greater use of part-time faculty members recruited from the ranks of business, industry, and government. There are numerous administrative and scientific officials who are qualified by educational attainment and experience to teach college students. Many of these individuals would gladly undertake instructional assignments in off-duty hours at modest remuneration to help meet the critical needs of the next decade. Many of these individuals, furthermore, would make quite competent instructors.

Undoubtedly, the community colleges will look to the high schools for some of their most competent instructors and will also recruit heavily from the university graduate students who have not obtained a doctoral degree and from some who have. Persons holding a doctor's degree are likely to prefer instructional assignments in four-year colleges and in universities, but some of these may be willing to undertake instruction in two-year institutions.

University branches, as we have said, will enjoy the advantage of calling upon the graduate programs of the university to help staff branch instruction. This practice may in some instances extend the time in which a graduate student completes his doctoral program but may also assist in meeting the financial requirements of graduate study. University branches, it is hoped, may also succeed in recruiting young Ph.D. recipients, giving them a first instructional experience in a branch. If university faculty personnel systems operate effectively, young instructors or assistant professors making an outstanding record in a branch may then find subsequent opportunity to teach on the central campus in upper division and graduate programs.

There is yet an additional instructional resource which the university branches in particular may utilize. This is closed-circuit television. Television production centers on a university campus or on a state-wide basis might well produce lecture and demonstration or illustrative material for classroom instruction on the central campus and at all branches of the university. Under most circumstances, it would seem desirable for such lecture and demonstration material to be supplemented by small group discussion. Such discussions might well be led by competent graduate students.

The combination of all these possibilities of meeting the staffing requirements of community colleges and university branches should be sufficient to enable both kinds of organization to carry on their mission effectively in the next fifteen years.

The University of Cincinnati

The University of Cincinnati was the first municipally sponsored university to be established in Ohio. When a state law was enacted in 1870 to permit "cities of the first class to aid and promote education" by chartering a university, the City of Cincinnati took immediate steps to do so, absorbing into the new university a privately sponsored institution, Cincinnati College, which had its beginnings in 1819. From time to time thereafter the municipal university absorbed other separate educational activities, including two medical colleges (the Medical College of Ohio in 1896 and the Miami Medical College in 1909), a college of law (in 1918), a college of business administration (1912), a college of nursing (in 1916), a college of pharmacy (in 1954), and a college-conservatory of music (in 1962). In addition, The University of Cincinnati created additional instructional divisions besides the College of Arts and Sciences set up in 1870: a College of Engineering (in 1900), a Graduate School (in 1900), a Teachers College (in 1905), a School of Home Economics (in 1924), a College of Design, Architecture, and Art (in 1946), a University College (in 1960), and an Evening College (in 1938).

As a municipally sponsored institution, The University of Cincinnati has developed as a major educational resource not just of the city and county but of the state and nation. The University has the second most extensive instructional program of any of the publicly sponsored universities in Ohio as of 1966, second only in the scope of its undergraduate, graduate, and graduate professional programs to The Ohio State University.

The University of Cincinnati has obtained its financial resources, other than student fees, from a city general property tax and from voluntary support from citizens and industry in the Cincinnati area and beyond. In 1963 the University, in accordance with a provision of the community college law (Section 3354.01 of the Revised Code), began to receive a state subsidy for Ohio students enrolled at the lower division level.

For the year 1965-66 The University of Cincinnati has estimated that its instructional income would be as follows:

Source	*Amount*	*Percentage of Total*
Local Taxes	$ 3,790,000	18.4
State Taxes	1,349,000	6.5
Student Fees	12,020,021	58.2
Endowment	1,207,067	5.8
Gifts and Grants	1,745,274	8.4
Miscellaneous	539,277	2.7
	$20,651,039	100.0

It is apparent from this summary that nearly 60 percent of all instructional income of The University of Cincinnati is obtained from student fees. The City of Cincinnati, plus Golf Manor, provides 18 percent of instructional income.

There are two basic financial problems which confront The University of Cincinnati at the present time. The first problem is the relative stability of municipal income. The University depends upon a two mill general property tax levy for its support, and the income for this levy increases only as the general property tax valuation of the municipality increases. The general property tax income does not of course increase in proportion to enrollment increases. Moreover, there would probably be considerable local opposition to any proposals to increase the millage. Secondly, the University is engaged in extensive graduate and graduate professional programs which are expensive to operate and which will become increasingly expensive as more students undertake graduate study. Thus, the University is faced with a situation in which it must have more instructional income but in which additional income from the local general property tax seems unlikely.

In this set of circumstances, various alternatives of enlarged income have been explored by the Board of Directors and the administrative staff of the University. One possibility would be to extend general property tax support from the City of Cincinnati to the entire area of Hamilton County. This possibility is permitted under existing state law but only with the concurrence of the voters of the areas outside of Cincinnati. As of the 1960 census some 45 percent of the population of Hamilton County resided outside the city limits, and it seems probable that this proportion will be more than 50 percent by the time of the 1970 census. Up to this time, only Golf Manor outside the City of Cincinnati has been willing voluntarily to extend tax support to the University.

Another possibility of additional income is to extend the voluntary support of The University of Cincinnati. Currently, the University receives for instructional purposes some 1.2 million dollars in endowment income and nearly 700,000 dollars in corporate and individual annual contributions. This support is encouraging indeed, but there is some question whether such voluntary support can expand in pace with the increased income needs of the University.

In the absence of a large scale increase in general property tax income or in voluntary gift income, the remaining possibility is to increase student fees. It is difficult to present a concise summary of student fee charges at The University of Cincinnati, since the fees vary from college to college and in some instances vary between the freshman year and other years of study. Furthermore, there are three different levels of charges in each college, based upon the residence status of the student. Charges are lowest for a resident of Cincinnati and Golf Manor, higher for residents of Ohio, and highest for a non-Ohio resident. In general terms, it may be said that as of 1965-66, in undergraduate programs (other than Music), the fee charges for a three-quarter academic year for a Cincinnati resident tended to average about $525, for Ohio residents $915, and for non-Ohio residents $1,050. For the Cincinnati resident such charges could not be considered as unduly large. Yet any action to increase these charges would have made the instructional fee to the Cincinnati resident a good deal higher than that of other publicly sponsored universities in Ohio.

The real student fee problem at The University of Cincinnati is the fact that the state subsidy for lower division students which began in 1963 has not been reflected in the charges to the Ohio resident living outside the City limits of Cincinnati. Indeed, the fee differential between an Ohio resident (but not a Cincinnati resident) and an out-of-state student was less than the amount of the state subsidy per student for lower division students. Officials of The University of Cincinnati have recognized this circumstance but have been uncertain how to meet it. They have tended to look upon the state subsidy as general support rather than as support specifically of lower division students, and they have been unable to reduce fees for lower division students (both for Cincinnati and for Ohio residents) without finding an alternative source of income.

There remains a fourth possible source of increased income for The University of Cincinnati, which is further state financial support. This possibility has been explored in a tentative way by the staffs of the University and of the Board of Regents, and has been considered also in a special study undertaken by an outside consultant retained by the University.

Additional state support of The University of Cincinnati beyond that now provided would require authorization by law. Moreover, such support would have to be based upon a different definition of relationship between the University and the State of Ohio. It is not a simple matter to determine what this relationship ought to be. There appears to be no doubt that the University needs additional income in order to maintain and improve its existing programs of instruction. It does not seem reasonable to expect that the City of Cincinnati can or should provide this income from the general property tax. The question then is what kind of new relationship should be developed between The University of Cincinnati and the State of Ohio.

One answer to this question would be for the property and assets of the municipally sponsored University of Cincinnati to be transferred to a new state-sponsored University of Cincinnati. The Board of Directors and the officers of the University do not favor this solution. The University of Cincinnati has a lengthy tradition of local interest and support. If this tradition were broken and the municipal ties of the University were severed, not only would municipal tax support be terminated but much of the local voluntary assistance to the University might be substantially curtailed.

It is recognized that the relationship of The University of Cincinnati to the State of Ohio insofar as lower division students are concerned must be clarified. Such students should be regarded as state-supported students, and the University should be provided the facilities as well as the current operating funds to meet the needs of all such students within the Cincinnati area who seek admission to lower division programs of the University. The University will in all likelihood desire to continue admitting both Ohio and non-Ohio students to these programs. Lower division students from any place in Ohio ought to be charged a common fee, approximately in the neighborhood of the $525 for a three-quarter academic year which was in effect during 1965-1966. Students from inside Cincinnati might well be charged something less.

Insofar as the upper division programs of the various colleges of the University are concerned, these might be considered as the special province of the municipally sponsored university. The colleges so involved would be those of Arts and Sciences, Engineering, Education and Home Economics, Business Administration, Nursing and Health, Pharmacy, Design-Architecture-Art, and Music. Here the municipal tradition and contribution might be particularly recognized. In terms of student fees, it would be reasonable, for example, for residents of the City of Cincinnati (and of Golf Manor) to be charged approximately $600 for a three-quarter academic year and for other Ohio residents and out-of-state students to be charged higher fees for a three-quarter academic year. Since many of these students will be enrolled in cooperative instructional programs involving alternating periods of study and work experience, they will have an opportunity to earn income with which to help meet the instructional charge.

Under such an arrangement as that just outlined, there would remain the College of Medicine, the College of Law, and the Graduate School which would require some new organizational and financial status. One possible solution would be to establish these three instructional divisions of the University of Cincinnati as "contract colleges" with the State of Ohio. It would then be possible to regard all three divisions as academic resources of the State of Ohio which should be available equally to all qualified graduate students. As "contract colleges" their instructional programs would receive the same state tax support as that provided comparable programs in state universities. Under this organization some provision might also be made in law for the

Governor of Ohio to appoint additional members to the Board of Directors of the University of Cincinnati.

The concept of "contract colleges" set forth here would not be unique. Such a status already exists within the State University of New York where several instructional programs are operated under contractual arrangements with Cornell University, Syracuse University, and Alfred University.

The Universities of Akron and Toledo

The University of Akron was established as a municipally sponsored institution of higher education in 1913. The University was successor to a privately sponsored college, Buchtel College, which had been founded in 1870. The University of Toledo was established as a municipally sponsored institution of higher education in 1884, being successor to a privately sponsored institution founded in 1872. Both universities have been of inestimable service to the citizens of their communities as well as to a larger constituency.

Both universities came to realize that their area of service had to reach beyond the limits of their respective municipal boundary lines. For this reason the two universities in 1965 requested the General Assembly to consider legislation making them state rather than municipally sponsored institutions. The Board of Regents endorsed this proposal. Under the terms of Senate Bill No. 212 as enacted by the 106th General Assembly, two new state-sponsored universities were created to come into existence as of July 1, 1967.

On January 14, 1966, the Board of Regents approved agreements submitted by the Boards of Directors respectively of the Universities of Akron and Toledo for the transfer of all instructional programs, property, assets and liabilities, and staff of the two municipally sponsored universities to new state-sponsored universities. These agreements further require the approval of the city councils of the two municipalities and then ratification by charter amendments to be approved by the electorate of each municipality.

If these approvals are forthcoming, two new state-sponsored universities will be created as of July 1, 1967. Both The University of Akron and The University of Toledo will then become full participants in the state system of higher education. Each municipality will receive the benefit of termination of the two mill general property tax levy which currently provides partial support for each institution. For the academic year 1965-1966 The University of Akron has estimated that 26 percent of its instructional and general income would be obtained from the City, while in the instance of The University of Toledo the proportion was estimated to be 26.5 percent.

The benefit to the two universities in a change of status will be that of some assurance of income expected to expand with enrollment growth and with the growth of graduate programs. Municipal tax support provided by a general property tax levy was unable to afford any such promise. Both enrollment growth and program growth were inhibited by limited municipal tax assistance at these universities.

The benefit to students in a change of status will be an equality between charges made to Ohio residents outside the City limits and the lower charges currently made to the legal residents of Akron and Toledo. This equality will result in the effective service area of each university being greatly enlarged.

The benefit to the State of Ohio will be that of assurance of educational opportunity for all citizens of the Akron and Toledo areas (not just citizens living within the Akron and Toledo city limits) on an equal basis. The enrollment pressure upon other state universities arising out of Summit and Lucas Counties should be lessened by this circumstance. Moreover, the state will now be able to make certain that the educational needs of these two populous and important industrial centers are more adequately met than may have been possible under past financial circumstances.

The Bowling Green State University

The Bowling Green State University was originally established in 1910 as one of two new normal schools set up in the state. Several years earlier the General Assembly of Ohio had by law directed The Ohio University, The Miami University, and The Ohio State University to create normal schools. This action was taken in order to meet the growing demand in Ohio for professionally educated elementary school teachers for the public school system. As of 1910 the General Assembly enacted legislation to provide two additional normal schools, one to be located in northeastern Ohio and one in northwestern Ohio. In this way a desirable geographical dispersion of teacher education facilities in all four corners of the state and in the center would be realized. A commission authorized by the 1910 legislation selected Kent and Bowling Green as the sites for the two new normal schools.

The Bowling Green State Normal School began its instructional operation in 1914. In 1929 the General Assembly changed the name to Bowling Green State College in recognition of the fact that the professional education of both elementary and secondary school teachers required as a desirable minimum a baccalaureate (four-year) instructional program. As a result of the new designation, a college of liberal arts was created within the new State College in 1929. This action was taken to enlarge the program of the College to include undergraduate study in the arts and sciences as well as in teacher education.

In 1935 the General Assembly again changed the designation from Bowling Green State College to The Bowling Green State University. The University was intended to become generally comparable to The Ohio University and The Miami University, located respectively in the southeastern and southwestern parts of the state. A college of business administration and a graduate school were added as academic divisions of the new University at this time. Since 1935 The Bowling Green State University has grown in size and has developed a comprehensive undergraduate program. In the past ten years it has begun to move beyond the master's level of graduate study into the doctoral level.

Because of its location in a relatively small urban community some 23 miles south of Toledo, The Bowling Green State University has had to become preponderantly a residential campus. Most of its undergraduate students are housed in University owned and operated facilities. Its enrollment growth has been largely tied to the expansion of its residential facilities. As of 1965-1966 the University's residence halls and houses were able to accommodate around 7,000 students.

Because of the legal requirement of open-access for all high school graduates to state assisted universities, The Bowling Green State University has enrolled a larger number of lower division than upper division students, even though some restrictions based upon academic promise have been applied in the assignment of incoming students to residence hall facilities. In the autumn of 1965, the enrollment distribution of Bowling Green students on the central campus on a head count basis was as follows:

	Number	Percentage
Lower Division	5,555	56.3
Upper Division	3,475	35.2
Graduate	833	8.5
Total	9,863	100.0

It is expected that The Bowling Green State University will stabilize its lower division enrollment on a residential basis between 5,000 and 5,500 students and that it will expand its upper division and graduate enrollment in the future. It is expected that as long-range objectives, Bowling Green will double its enrollment at the upper division level and will enroll around 2,000 graduate students.

The upper division enrollment goals should be met from transfers from branches, academic centers, and from other institutions. Graduate enrollment goals should be met from an expansion of graduate programs.

The Central State University

The origins of The Central State University make the institution one of the unique public universities in the United States. In 1856 Wilberforce University was established as a missionary enterprise of the Methodist Episcopal Church on a site near Xenia, Ohio, some 50 miles southwest of Columbus. It is said that an underground station for the movement of Negroes from the southern states to northern states was located in this area. In any event, Wilberforce University, named in honor of the well-known leader of the English abolitionist movement, was established to provide higher educational opportunity for Negro youth.

In 1863 Wilberforce University was transferred from the Methodist Episcopal Church-North to the African Methodist Episcopal Church insofar as sponsorship was concerned. During the 1880's when a system of appropriations for current operating support was being developed for the then existing state-sponsored universities (Ohio, Miami, and Ohio State), Wilberforce University sought state government assistance for the education of Negro teachers to instruct Negro youth in the public elementary schools, many of which were then operated on a segregated basis. As a result of this request, the General Assembly in 1887 passed legislation creating a combined Normal and Industrial Department within Wilberforce University which was in effect a state sponsored and state assisted college. Not until 1941 was the designation legally changed by the General Assembly to the College of Education and Industrial Arts. Throughout the intervening years, however, Wilberforce University remained in effect the parent institution of a state sponsored and supported instructional program.

Finally, in 1951 the anomoly of the existing situation was recognized by enactment of a law officially establishing Central State College as a state college separated from Wilberforce University. The existing campus and instructional buildings were divided between the two institutions. In 1965 the General Assembly changed the designation to The Central State University.

A relatively young state institution of higher education if we accept 1951 as the date of establishment, The Central State University has faced a number of troublesome problems in its first fifteen years of existence. Because of its origins within a private institution, The Central State University has been as well known outside Ohio as inside, and has tended to draw many of its students from outside the state. Secondly, the University has tended to be regarded by many persons as preponderantly an institution for Negro students, although all Ohio public institutions are open on an equal basis to students regardless of race, religion, or national origin. The enrollment growth of Central State has been slow, and because of their limited family and personal resources Central State students often have found it difficult to meet the student charges of the institution. Moreover, many students at Central State have not been able to remain to complete a baccalaureate program, frequently because of financial difficulties. In 1965-1966, of some 2,194 students on the Central State campus, over 1,400 were enrolled in the lower division and only 737 in the upper division. There were 24 graduate students in that year. In the third place, because of its location in a rural area, Central State must provide housing facilities for practically all of its students. This circumstance increases the cost of enrollment to the student.

It is highly desirable that The Central State University expand in size. The University is uneconomical to operate with its present enrollment and ought to have at least 5,000 students in order to become as economically efficient as other state institutions. It is highly desirable also that the proportion of upper division and graduate students should be increased.

It is difficult to see how enrollment growth can be obtained without an expansion of residential facilities. The Greene County area can scarcely be expected to provide any large number of commuting students, although the number should be increased in every way possible. Both private investment and university investment might be employed to increase the available residence hall facilities.

Under no circumstances should The Central State University be considered as exclusively or preponderantly a Negro university. The student body has already been integrated during the past fifteen years and this inter-cultural characteristic might well be strengthened in the coming years. In this way the University could well realize a special place among institutions of higher education in Ohio and the nation.

Because of its small size, because of a peculiar provision of law, and because of the limited economic resources of many of its students, Central State throughout fifteen years has required a much larger appropriation of state funds per student than any of the other state institutions, including The Ohio State University. As Central State increases in size, part of this special subsidy will no longer be necessary. Section 3343.09 of the Ohio Revised Code provides that each Senator and Representative of the General Assembly may designate one or more youths, "resident of his district," who may attend The Central State University free of tuition. This provision of law, however, is inconsistent with Section 3345.01 of the Revised Code of Ohio, which in effect directs all state universities not to charge tuition to any student who is a legal resident of Ohio. State universities do charge a registration and general and special fees to Ohio residents, but they charge a tuition fee only to nonresidents of Ohio. There appears to be no reason why all Ohio residents should not be charged registration, general, and special fees at The Central State University.

It does seem desirable, however, for the State of Ohio to provide additional subsidy to Central State beyond that provided other universities in order that its registration and other fees might be lower than those at other universities. As a residential campus, Central State will be more expensive for the student to attend than a commuting campus would be. As a residential campus urgently requiring increased size, Central State should receive some continuing subsidy such as will encourage expansion.

The Cleveland State University

The Cleveland State University was officially created during a special session of the General Assembly in December, 1964, in accordance with a recommendation by the Board of Regents to the Governor. The University acquired the property of Fenn College in downtown Cleveland and began instructional operations in September, 1965.

The establishment of The Cleveland State University was essential to provide enrollment opportunity for students in a public university residing in the state's largest metropolitan community. It is expected that Cleveland State will be preponderantly a commuting institution.

The enrollment growth of Cleveland State at the present time is hampered by a shortage of instructional facilities. The 5,462 students enrolled as of October 1, 1965, represented about the maximum number which could be accommodated in the existing plant obtained from Fenn College. Moreover, a large part of this enrollment consisted of part-time students. The full-time equivalent student enrollment at Cleveland was only 3,416.

Appropriations for a large-scale construction program at Cleveland State were provided by the General Assembly in 1965, and land adjacent to the University has already been acquired for new academic facilities. It is expected that an instructional plant to accommodate 20,000 students on a head count basis, or approximately 12,000 students on a full-time equivalent basis will be provided at the downtown location. It is imperative that this plant be built as rapidly as possible.

It seems unlikely, however, that a plant of the planned magnitude will be able to meet all of the enrollment demand which may be expected to arise in the Cleveland area. For this reason additional facilities may be needed in the 1970's. It remains to be decided whether these facilities should be built adjacent to the present plant or at other locations. The relationship of the University to The Cuyahoga Community College must also be resolved before further expansion of facilities is undertaken.

Another immediate problem of The Cleveland State University is to expand its instructional program as quickly as possible. The University needs a strong College of Education and College of Business Administration in addition to its College of Arts and Sciences and the Fenn College of Engineering. These programs, moreover, must be expanded to the master's degree level as soon as faculty and facilities will permit. In the due course of events still additional undergraduate and graduate programs may be needed in the Cleveland area and should be provided by Cleveland State.

As of October 1, 1965, the head count enrollment at Cleveland State was divided as follows:

	Number	Percentage
Lower Division	3,897	71.3
Upper Division	1,565	28.7
Total	5,462	100.0

Insofar as the downtown campus of The Cleveland State University is concerned, the eventual goal should be to have at least 50 percent of all students enrolled at the upper division level. As a new institution with an especially large proportion of lower division students, The Cleveland State University will probably require a special operating subsidy.

The Kent State University

The early history of The Kent State University was similar to that of The Bowling Green State University. The University was authorized by the same legislation enacted in 1910, and its designation from that of a state normal college to that of a state university was altered by the same laws. Instruction was begun on an extension basis in 1912 and on the campus in 1913.

Two important differences have characterized the activities of Kent State in comparison with Bowling Green and indeed other state universities. First of all, Kent State is located in the most heavily populated part of the State of Ohio. The City of Kent is only 11 miles east of Akron, 33 miles southeast of downtown Cleveland, and 40 miles west of Youngstown. Thus, the University has been able to serve a relatively large number of students on a commuting basis. Secondly, in the absence of any opportunity for public higher education in the immediate Cleveland area until 1965, the student demand for a variety of professional programs of higher education has encouraged the University to expand its programs in various fields and levels of instruction.

The commuting characteristic of The Kent State University student body has been changing in recent years and will change even more in the next few years with the growth of The Cleveland State University and the conversion of The University of Akron from municipal to state sponsorship. As late as 1957 the University had facilities to house only about 2,500 students and this had increased to 5,300 in 1963 and to 7,500 in 1966. No doubt the University's central campus will become even more highly residential in the years ahead.

The Kent State University has also been pushing ahead since 1960 in the development of a graduate program at the doctoral level. This effort has been responsive to the needs of the northeast section of the State of Ohio.

In the autumn of 1965 on a head count basis enrollment on the Kent State central campus was as follows:

	Number	Percentage
Lower Division	8,668	58.5
Upper Division	4,367	29.5
Graduate	1,793	12.0
Total	14,828	100.0

In recent years Kent State has also developed a substantial off-campus instructional activity. In 1965-1966 the University had 13 part-time branches in operation with a total enrollment of nearly 6,500 students. This was the largest off-campus enrollment of any state university, if we exclude the enrollment of the Wright State Campus branch of The Miami University.

As of 1965-1966 Kent State was proceeding with the planning and construction of four branches for full-time operation. It was expected that these facilities would permit a considerable increase in the number of off-campus students provided lower division instruction by the University. The University has moved forward in plans to provide technical education at these branches.

It is hoped that in the near future The Kent State University may stabilize its lower division campus enrollment at about 7,000 students, increase its upper division enrollment to around 10,000 students, and enlarge its graduate program to around 3,000 students.

The Miami University

The Miami University was founded in 1809 by an act of the Ohio General Assembly with a land-grant of some six square miles or some 23,000 acres of land in the northwest corner of Butler County in southwestern Ohio. This land-grant was provided in accordance with the provisions of the Northwest Ordinance of 1787 and the terms of land purchase arranged by John Cleves Symmes, first with the Congress of the Articles of Confederation and later with the Congress of the United States. Preparatory instruction began at The Miami University in 1818 and college level instruction started in 1824.

Originally, the financial support of The Miami University was expected to be derived from land rents and from student fees. The land rents provided only modest income, however, and the General Assembly in the 1840's provided that they were not to be increased by the University. The area was relatively remote from such industrial development as began to take place in southwestern Ohio and even today Oxford is the smallest community other than Wilberforce where a state institution is located. Because of financial difficulties, Miami was closed in 1873 and did not reopen until 1885. At that time, the General Assembly began to provide appropriations to Miami, Ohio, and Ohio State for instructional buildings and for current operating purposes.

As of October 1, 1965, The Miami University on a head count basis had an enrollment on its central campus as follows:

	Number	Percentage
Lower Division	5,375	53.9
Upper Division	3,989	40.0
Graduate	616	6.1
Total	9,980	100.0

Because Oxford is a small town, Miami has been required to provide housing facilities for a large proportion of its students. The University's housing capacity in 1965-1966 was around 7,000 places. The University has had very few commuting students.

The Miami University inaugurated a graduate program at the doctoral level in cooperation with

The Ohio State University in 1959 and is only currently beginning efforts to introduce its own separate doctoral study.

The University provided off-campus instruction in 1965 to nearly 2,500 students in four branches and to nearly 4,000 students on the Wright State Campus. A permanent facility for branch instruction was scheduled to be opened in September, 1966, at Middletown, and instruction there was expected to expand considerably. Another branch facility was being planned in Hamilton.

It was expected that The Miami University would expand its graduate program in the years ahead, that it would limit its lower division enrollment on the central campus to around 5,000 to 5,500 students, increase its upper division enrollment to around 7,000 students, and enroll 1,500 to 2,000 graduate students.

The Ohio University

The Ohio University was the first institution of higher education created in Ohio and the first created in the original Northwest Territory of the United States (Ohio, Michigan, Indiana, Illinois, and Wisconsin). The Ohio Company, which originally undertook the promotion of settlement in Southeastern Ohio nearest to Pennsylvania and Virginia, obtained a land-grant of 1,500,000 acres. Under the agreement with the Congress of the Articles of Confederation two townships were to be set aside for the support of a university. After several preliminary efforts had failed, the General Assembly of Ohio provided for the establishment of The Ohio University in 1804, one year after the creation of the state. The new University was located in Athens and endowed with two townships of land (some 40,000 acres). Preparatory instruction began in 1808 and college instruction in 1819.

As early as 1826 The Ohio University Board of Trustees received legislative authorization to sell land in fee simple rather than to sell a leasehold subject to periodic re-evaluation of land rents. Because of continuing financial difficulties, the Board sold or leased land until the campus proper was reduced to about 15 acres in size. One of the problems of the University in the past 40 years has been that of acquiring the land needed for expansion of instructional, research, and residential facilities.

The Ohio General Assembly first provided funds for repair of buildings at The Ohio University in 1881 and then began annual appropriations for operating purposes in 1885. These early amounts seem modest indeed in comparison with present-day outlays: $20,000 for repair of building and $4,900 for current operations.

Ohio University's enrollment grew substantially after World War I and again after World War II. The instructional programs also expanded during this same period. While the economic prosperity of southeastern Ohio was declining, the demand for higher education was growing and large numbers of students from throughout Ohio, and especially from northeastern Ohio, began to enroll. A substantial housing program on the part of the University during the 1950's and 1960's has encouraged this trend.

As of October, 1965, the enrollment on The Ohio University central campus was as follows:

	Number	Percentage
Lower Division	8,472	60.7
Upper Division	4,322	31.0
Graduate	1,157	8.3
Total	13,951	100.0

In addition, The Ohio University has been active in developing branch instruction in various communities of southeastern Ohio. There was an enrollment of over 4,800 students in six branch centers as of 1965. Currently, permanent facilities are under construction in four locations and a fifth one is being planned. Whether these branches will be able to enroll students to their capacity remains to be seen. It is probable that lower division students might be encouraged to find living accommodations in some of these places and help expand the enrollment of these five branches.

The Ohio University is now enlarging its graduate program, especially at the doctoral level. Partly this endeavor is a phase of a concerted effort by the University to improve the economic resources of the area and to promote economic growth. Partly this endeavor reflects a general need in Ohio to strengthen and expand graduate education.

The Ohio University appears to have a disproportionate percentage of its enrollment on the central campus at the lower division level. As a long-range goal, lower division enrollment should be stabilized at around 7,000 students, the upper division enrollment should be increased to around 10,000 students, and graduate enrollment should be increased to around 3,000 students.

The Wright State University

The youngest potential new state-sponsored university in Ohio is The Wright State University which is expected to come into existence as of July 1, 1967. The Miami University established a part-time branch in Dayton just before World War II, and expanded the operation substantially after World War II in order to help meet the enrollment demand of returning veterans. In addition, The Ohio State University established a program of graduate study in engineering at Wright-Patterson Air Force Base in 1946.

In 1962 a citizens group in the Dayton area raised three million dollars from voluntary contributions with which to provide permanent facilities for these two branch activities. From these resources a site of some 400 acres was purchased northeast of Dayton near the City of Fairborn, supplemented by a gift of some 200 acres of surplus land from the federal government. In addition, an academic facility to accommodate 1,000 day-time and 2,000 late afternoon and evening students was built and opened in September, 1964. Capital appropriations by the General Assembly have provided two additional buildings to be opened in 1966 and a fourth one in 1967. The available facilities were badly overcrowded as of 1965-1966.

Because of the enrollment growth of this branch campus, the General Assembly in 1965 enacted legislation creating the Wright State Campus as a separate administrative entity as of November, 1965, and enabling a new state sponsored university to be established when the enrollment reaches 5,000 full-time equivalent students. The enrollment objective should be reached in time to permit official establishment of the new university as of July 1, 1967. As of October, 1965, Wright State Campus had a head count enrollment of 4,516 students and a full-time equivalent enrollment of 2,896.

The immediate problem for Wright State Campus and for The Wright State University as of 1967 will be to develop the appropriate academic organization and curriculum to provide full-scale undergraduate programs and master's degree programs in the humanities and social sciences, the sciences and engineering, teacher education, and business administration. Later consideration may be given to the possible need for a program in the fine arts.

The science and engineering program as planned for The Wright State University is a continuance of work previously undertaken and is intended to be different from the engineering program offered at eleven other private and public institutions in Ohio. This program involves a limited number of fields of specialization which are not generally being provided elsewhere and which would match professional and research resources unique to the Dayton area. The fields of specialization as developed are in biological engineering, materials science engineering, and systems engineering. While additional science and engineering fields may be developed at a later date in the light of demonstrated need, it is expected that initial efforts will be concentrated upon these three science and engineering specializations in order to make them of outstanding quality.

Because of its location in the immediate Dayton area, it is intended that The Wright State University for the present should be preponderantly an institution serving students on a commuting basis. Montgomery County is the fourth largest county in the State of Ohio, and there are sizeable populations in two adjoining counties—Butler and Clark—from which students may be attracted to the University.

The Toledo State College of Medicine

The Toledo State College of Medicine was established by legislation enacted during a special session of the 105th General Assembly in December, 1964. The College has been created in order to help meet a nationwide shortage of facilities for medical education.

It is expected that The Toledo State College of Medicine will have an entering class of 100 students a year. The College will need basic science, clinical science, and hospital facilities sufficient to provide proper medical instruction for a total student body of approximately 384 students. It is hoped that instruction at The Toledo State College of Medicine may begin not later than 1969.

The Ohio State University

The Ohio State University was created in 1870 by the General Assembly as the Ohio Agricultural and Mechanical College. In 1864 the General Assembly had decided to take advantage of the federal government's Morrill Act of 1862 which offered to each state 30,000 acres of land for each senator and representative in the Congress with which to endow a college or university which among other subjects would teach agriculture and the mechanic arts. Under the federal law, Ohio was entitled to receive title to some 630,000 acres of public land. Since no public land was available in the state, Ohio received land script for land located in western states and territories. This script was sold for about $340,000, which amount provided the original endowment for the new college.

Both The Ohio University and The Miami University had hoped to receive all or part of this endowment. Finally, in 1870 the General Assembly decided to establish a new college, and the initial Board of Trustees, after considering proposals from three other counties, determined upon a location in Franklin County, the seat of the state government. Franklin County provided public funds of $300,000 and private subscription of $28,000 to help start the new college. With these funds, the Trustees purchased a site of 320 acres known as the Neil farm which was then some distance from the City of Columbus. Instruction began in 1873. In 1878 the General Assembly changed the name to The Ohio State University. Many years later, in 1916, there was a proposal to designate the institution as the University of Ohio. Such legislation was not enacted.

Because of its location in a rapidly growing urban area—it was the only state university so located—and under the aggressive leadership of President William Oxley Thompson (1899-1925), The Ohio State University grew substantially in students and in breadth of academic programs, including study at the doctoral level. Up until 1956 The Ohio State University was the only state university with doctoral programs. As of 1965 it was still the only state-sponsored university with programs in agriculture, optometry, pharmacy, veterinary medicine, law, medicine, and dentistry.

As late as 1957 The Ohio State University had provided housing facilities for only 3,000 students. The University drew nearly half of all its students from the Franklin County area, and other students were expected to find housing accommodations in the University neighborhood. In the past 10 years The Ohio State University has carried on an extensive housing construction program. As of 1965-66, the University was able to house 10,000 students on its central campus, and construction was planned or underway to increase this number to 15,000. Such facilities were necessary if the University was to serve properly students from all over the state.

As of October, 1965, the head count enrollment on the Ohio State central campus was as follows by levels of study:

	Number	Percentage
Lower Division	18,394	52.4
Upper Division	8,148	23.2
Graduate Professional	3,003	8.5
Graduate	5,575	15.9
Total	35,120	100.0

It is interesting to note the heavy concentration of students at the lower division level. This suggests that Ohio State has grown in enrollment size in considerable part because of the large number of students admitted in response to the open-access requirements of Ohio law. It is also instructive to observe the proportion of undergraduate students who list Franklin County as their place of residence; such data for graduate and graduate professional students have little meaning since so many of these students, especially those who are married, establish their legal domicile in the County while carrying on their advanced education. As of October, 1965, at the undergraduate levels on a head count basis, enrollments in relation to Franklin County were as follows:

	Total	Franklin County	Percent
Lower Division ..	18,394	4,902	26.6
Upper Division ..	8,148	2,371	29.1
	26,542	7,273	27.4

Thus, it is apparent that over one-quarter of the lower division enrollment at Ohio State in 1965 was provided by Franklin County, while the proportion of upper division students was slightly more than 29 percent. The University has obviously been meeting enrollment demand at the undergraduate level increasingly from throughout the entire state.

The Ohio State University has a dual mission to fulfill. On the one hand the University must provide educational opportunity for high school graduates from the Franklin County area. This demand must be met by the State of Ohio in one manner or another and under the circumstances it seems preferable that Ohio State should meet this need. It is doubtful whether the citizens of the area would be satisfied with any other arrangement. Secondly, The Ohio State University must fulfill the mission of providing certain special programs for the benefit of the state as a whole, particularly a graduate program at the doctoral level.

In the past this dual mission of the University has not been clearly understood. Nor has University organization and operation in the past made a clear-cut distinction between the two missions. More recently, this situation has been changing. The University has developed plans for a General College which will be located west of the present main campus and which will accommodate at the lower division level all commuting students from the Frankin County area, except those who may be admitted to special programs available only on the central campus or the campus of the College of Agriculture and Home Economics. The development of this General College will be an important step in providing the needed facilities and educational program for citizens of the Franklin County area. Eventually, the General College will need to accommodate as many as 12,000 students on a day-time shift and as many as another 10,000 to 12,000 students in a late afternoon-evening shift.

In addition, The Ohio State University has been active in developing permanent branches in Lima, Mansfield, Marion, and Newark. These, too, will be helpful in expanding educational opportunity in these areas at the lower division level.

It is recommended in the Master Plan that The Ohio State University restrict the admission of freshman students on a residential basis to the central campus and the agricultural campus to 6,000 incoming students as of October each year. These students would be enrolled in special programs, in honors programs, and in other categories. The total lower division enrollment on the central campus might then be expected to total around 11,000 students.

The upper division enrollment on the central campus should be expected to increase from 8,100 students as of October, 1965, to some 12,000 to 13,000 students in the 1970's.

It is especially desirable to increase the facilities and the current operating suport for graduate study and research at The Ohio State University. It is in that mission of the University to foster graduate study at the doctoral level and graduate professional study in such fields as medicine and dentistry and law, that the University can make its primary contribution to the State of Ohio. It is to this mission that the University should give particular attention in the years which lie ahead.

It is hoped that in the 1970's The Ohio State University will enroll up to 15,000 students in its graduate professional and graduate programs.

The Ohio State University must be regarded as the major resource of the State of Ohio for special professional programs and for graduate programs, particularly at the doctoral level. Located as it is at the center of the state, The Ohio State University is uniquely situated to provide facilities and services beneficial to all of public higher education in Ohio.

CHAPTER 8

THE ROLE OF THE OHIO BOARD OF REGENTS

The Ohio Board of Regents was created by House Bill No. 214 of the 105th General Assembly, effective September 20, 1963. Although a new agency of state government, the Board was in a very real sense the successor to and inheritor of planning activities which had been carried on for several years in Ohio.

The state sponsored universities had established an Inter-University Council of Ohio as early as 1938 in order to clear appropriation requests among themselves prior to their presentation to the Governor and General Assembly. In this way an effort was made to avoid competition and friction among the state universities in seeking appropriation support from state government. Such competition and friction had existed before 1938. The Inter-University Council usually negotiated with the Director of Finance as the representative of the Governor a general understanding about the total amount of money which would be available for current operating purposes and for capital improvement purposes during an upcoming biennium, and then the Council undertook to recommend the distribution of available funds among the six institutions.

In 1955 the Ohio College Association authorized a study of Ohio's needs to expand educational opportunity. The Association received a grant from the Ford Foundation to support half of the cost of this study and provided the remainder by a special assessment upon member institutions. The Association's committee which was directed to handle the project retained Dr. John Dale Russell as consultant and his report was published by the Association late in 1956.

In 1957, soon after his inauguration, Governor C. William O'Neill appointed an eleven member Ohio Commission on Education Beyond the High School to prepare recommendations for institutional and governmental action to meet an expanding enrollment demand in higher education. The Commission did not receive any public funds for its work. The Commission submitted a report in December, 1958.

In 1959 Governor Michael V. DiSalle recommended that the General Assembly authorize the creation of an Interim Commission on Education Beyond the High School. The 103rd General Assembly enacted such legislation establishing an Interim Commission of nine members for a four-year period of time. This Commission consisted of three members of the General Assembly and six members appointed by the Governor, and its legal life was to expire in May, 1963. The Commission received a small appropriation for its work in the biennium 1959-61 but no appropriation for the biennium 1961-63.

The establishment of the Ohio Board of Regents in 1963 followed in the footsteps of these earlier efforts. The Board of nine members appointed by the Governor and confirmed by the Senate for overlapping nine year terms, is a permanent agency of state government. The Board is authorized to appoint a Chancellor and such other professional, administrative, and clerical employees as may be necessary. The Chancellor under the terms of the law must be a "person qualified by training and experience to understand the problems and needs of the state in the field of higher education and to devise programs, plans, and methods of solving the problems and meeting the needs."

The Ohio Board of Regents is given by law a number of duties to be performed. The most important of these is to make studies of state policy in the field of higher education and to formulate a master plan for higher education for the state, "considering the needs of the people, the needs of the state, and the role of individual public and private institutions within the state in fulfilling these needs." Secondly, the Board is directed to review the appropriation requests of public community colleges and state universities and to submit its recommendations to the director of finance and to the chairmen of the finance committees of both the Senate and the House of Representatives of the General Assembly. The Board is required to "work in close cooperation with the director of finance" in preparing these recommendations and "in all other matters concerning the expenditure of appropriated funds" by community colleges and state universities. In the third place, the Board is directed to make recommendations to the Governor and General Assembly concerning the development of state financed capital improvements for higher education, the establishment of new state colleges and universities, and the establishment of new programs at state institutions of higher education.

Several duties of the Board of Regents have to do with the programs of existing state-assisted institutions. The Board has authority to approve all new degrees and new degree programs. The Board is also directed to make studies about the operations of state-assisted institutions, and to make recommendations about desirable programs and about desirable utilization of personnel and facilities. Apart from the approval or disapproval of new degrees and new degree programs by the Board, program recommendations of the Board are presumably to be directed to the community colleges and state universities themselves.

The Board of Regents is the state agency in which authority is vested to approve the establishment of technical institute districts and to issue charters for technical institutes. The Board is also empowered to approve the official plan of a community college and to issue a charter for its operation. In addition, the Board approves or disapproves the establishment of new state university branches and academic centers.

Finally, the Board of Regents has a number of duties to perform under federal government legislation providing grants for higher education purposes. The Board is authorized generally to appoint advisory committees to assist in its work and is directed to seek "the cooperation and advice of the officers and trustees of both public and private colleges and universities in performing its duties, in making its studies, and in formulating its recommendations."

The Master Plan

The powers conferred upon the Board of Regents to formulate a Master Plan and to recommend levels and patterns of state government financial support of higher education make the Board in effect a central planning agency for state government in the field of higher education. In the past, in Ohio and in other states, it has been said that state government efforts for higher education have not been carefully reviewed or planned.[1] It seems desirable that the state's administrative leaders and the state legislature should have the benefit of professional recommendations and advice and technical assistance in the formulation of state government policies affecting higher education.

It is important to a clear understanding of the role of a state government planning agency to recognize that such an agency does not make final determinations on state issues of public policy or public financial support. These determinations can only be made through exercise of the executive power and the legislative power of state government. A state planning agency does not remove any subject from "politics." A state planning agency, as in higher education, simply seeks to provide a comprehensive and professional source of advice on matters requiring executive and legislative decision-making.

It is important as well to recognize that the Ohio Board of Regents is not a governing board for the public institutions of higher education in the state. The authority of government is vested in every instance in the board of trustees of each state-supported institution of higher education. The role of the Board of Regents is essentially advisory and stimulative. The Board cannot direct or order action which in any particular instance it may think highly desirable.

Being neither a final authority in setting state policy nor a governing board for individual institutions, there is a real question concerning the extent to which a state planning agency in higher education can be effective. Effectiveness must be determined primarily by whether policy and financial recommendations of the planning agency generally are accepted and put into practice. On the one hand, effectiveness depends upon the care and reason with which recommendations are prepared by the state planning agency. On the other hand, effectiveness depends upon the working relationships of the planning agency with executive officers and legislators and the response of these officials to the recommendations of the planning agency.

Any master plan for public policy in the field of higher education must present guidelines for action on a number of questions. These questions are common to most if not all states in the United States. The answers proposed by a state Master Plan will tend to be different depending upon the traditions, needs, and public interest of the individual state.

Some of the questions which a Master Plan must seek to answer are these:

1. What are the higher educational needs

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[1] Cf. Christopher Jencks, "Diversity in Higher Education," *Consultants Papers, The White House Conference on Education*, July 20-21, 1965 (Washington: U.S. Government Printing Office, 1965), vol. 1, p. 57.

of the state and to what extent are these needs being met?

2. In seeking to meet these needs, shall the state government allocate all of its financial resources to the public sector of higher education, or shall a part of these resources be employed to assist, directly or indirectly, the private sector of higher education?

3. Shall the public sector of higher education provide open access to all high school graduates or seek to serve only those determined to be best qualified to complete a baccalaureate program?

4. How many students from outside the state should public institutions undertake to accommodate?

5. How much diversity in student body, in programs offered, in curricula, and in quality of faculty should be provided for in public institutions?

6. Should public support to the public sector of higher education encourage the enrollment of students on a commuting basis or on a residential basis?

7. To the extent that new commuter centers are called for, what organizational form should these take?

8. Should public policy favor the development of a few large institutions of higher education or a larger number of smaller institutions?

9. At the level of graduate study, especially at the doctoral level, should the role of most public institutions be restricted in order to concentrate efforts on one state institution?

10. If there is in fact a diversity of role among public institutions of higher education in a state, how shall this fact of diversity be reflected in the allocation of financial resources?

11. What factors should be developed as the basis for measuring the needs of public institutions for state financial support of current operations?

12. What factors should be developed as the basis for measuring the needs of public institutions for state financial support of capital plant improvement?

These are the kinds of questions to which this Master Plan seeks to provide answers. No such answers will please everyone. The best that can be done is to provide answers which seem likely to accomplish specified objectives.

A Master Plan must be flexible and changeable. A Master Plan is a general guide to decision-making, not an exact blueprint. Adjustments must be made to meet changing circumstances. Moreover, a Master Plan needs to be reviewed completely from time to time in order to take account of new conditions which may arise.

Finally, it must be emphasized that a Master Plan is always subject to discussion and criticism. It is not a document which is immune from comment or incapable of improvement. The Board of Regents is eager through discussion and through meetings with advisory committees to make decisions from time to time which will be generally in accord with this Master Plan but which also may represent advancement in the goals and improvements in the processes of higher education in Ohio.

Support of Current Operations

In the first legislative session following establishment of the Ohio Board of Regents, important changes were made in the state laws to make possible new fiscal autonomy for state-assisted institutions of higher education. At the same time, development of new analytical and reporting procedures was begun by the Board of Regents to assure that all financial and operating information needed by responsible state government administrators and by the General Assembly would be provided in a thorough and regular manner. Under such an arrangement the advantage of maximum flexibility in institutional management would be available to individual universities, while at the same time detailed information about university operations necessary to the formulation of state policy would be available in more complete and useful form than in the past.

During 1965, the Ohio Board of Regents recommended in this regard and the Ohio General Assembly enacted into law provisions under which registration fees, non-resident tuition fees, academic fees, and course fees should be retained in the hands of boards of trustees of state-assisted universities and should not be deposited thenceforth with the Treasurer of State. In addition, the General Assembly provided that the state government appropriation in support of the current operations of institutions of higher education should for the first time and henceforth be established as a subsidy to each institution.

As a result of this legislation, each state-assisted institution is recognized as a body politic and corporate in its own right, receiving a financial subsidy in support of its instructional program from the State of Ohio. This status is justified by the fact that state tax support represents only partial support of the instructional program of each state institution, while other major activities of a university ordinarily receive no state financial support for current operations.

At the same time that these improvements in the state-assisted institutions' fiscal procedures have been sought, great importance has been placed by the Board of Regents upon increased understanding of current operating needs of the universities and upon establishing sound analytical and reporting methods.

For financial planning and for accounting purposes, under a standardized chart of accounts prepared by officials of state government and of the universities, the program activities of state-assisted institutions are now grouped under five major categories of income and expenditure:

1. Instruction and General Operations
2. Research
3. Public Services
4. Auxilary Enterprises
5. Student Aid

The State of Ohio in all but a few exceptional circumstances provides financial subsidy only for Instruction and General activities. A part of the appropriation for operation of the hospitals at The Ohio State University is used for medical research. The State of Ohio also provides appropriations for the Agricultural Research and Development Center which is a separate organization. Insofar as Public Services are concerned, state appropriation support is provided for the hospitals of Ohio State and the Cooperative Extension Service for Agriculture and Home Economics of Ohio State. No state financial support is provided for Auxiliary Enterprises or Student Aid.

The distribution of expenditures among the five principal program areas of activity in the fiscal year 1965-1966 is shown in Table 31. Total current operating expenditures for thirteen state-assisted institutions of higher education were expected to total 226 million dollars. Of this total, about 70 percent was required for the Instruction and General program, while 10 percent went for Auxiliary Enterprises and almost 9 percent went for Research activity. These proportions varied

TABLE 31

Distribution of Total Budgeted Expenditures
State-Assisted Institutions 1965-66

	Instruction & General	Research	Public Service	Auxiliary Enterprises	Student Aid	Total
Bowling Green	$ 12,065,605	$ 167,775	$ 274,283	$ 2,747,709	$ 265,210	$ 15,520,582
Central	2,522,000	20,000	30,000	1,477,000	110,000	4,159,000
Cleveland	3,496,348	—0—	27,621	203,144	44,199	3,771,312
Kent	18,279,696	421,000	723,848	3,018,848	300,000	22,743,392
Miami	10,980,983	105,615	183,794	2,753,894	149,903	14,174,189
Ohio	16,599,695	451,852	1,142,863	2,832,775	610,290	21,637,475
Ohio State	58,614,500	13,560,300	11,449,225	6,381,162	3,779,300	93,784,487
Akron	6,217,467	214,500	159,765	459,561	175,000	7,226,293
Cincinnati	18,867,003	5,027,491	34,169	1,519,991	1,441,416	26,890,070
Toledo	7,441,809	—0—	58,411	955,555	326,000	8,781,775
Cuyahoga	3,495,350	9,506	8,812	226,750	25,000	3,765,418
Lorain	1,062,664	—0—	—0—	100,772	5,000	1,168,436
Wright	2,094,175	—0—	—0—	7,303	8,275	2,109,753
	$161,737,295	$19,978,039	$14,092,791	$22,684,464	$7,239,593	$225,732,182

substantially among individual institutions. Of all the funds available for Research at the state-assisted institutions, Ohio State accounted for about 70 percent. This spending for Research represented approximately 15 percent of Ohio State's total budget. The only other large research performer among the state-assisted institutions in 1965-66 was The University of Cincinnati.

As has already been noted, state appropriations for higher education provide only a part of the income required to support these various programs. Table 32 indicates for each institution the proportion of total expenditures for each program provided by the state subsidy. Only in the instance of Ohio State, as previously mentioned, is there a state subsidy for Public Service ($4,100,000 for hospital operations and $1,656,000 for the cooperative extension service) and a state subsidy for Research ($1,250,000 for medical research). On the average, the 75 million dollars appropriated in state subsidies for higher education in 1965-66 provided income to meet 36 percent of total expenditures. Within the Instructional and General program category, the pro-

TABLE 32

Percentage of State Appropriation To Each Expenditure Category
1965—1966

	Instruction & General	Research	Public Service	Auxiliary Enterprises	Student Aid	Total
Bowling Green	50.7%	0	0	0	0	39.4%
Central	72.6%	0	0	0	0	44.0%
Cleveland	56.2%	0	0	0	0	52.1%
Kent	48.2%	0	0	0	0	38.8%
Miami	58.2%	0	0	0	0	45.1%
Ohio	52.8%	0	0	0	0	40.5%
Ohio State	60.4%	9.2%	25.5%	0	0	45.2%
Akron	12.0%	0	0	0	0	10.3%
Cincinnati	7.3%	0	0	0	0	5.1%
Toledo	11.0%	0	0	0	0	9.4%
Cuyahoga	31.0%	0	0	0	0	28.8%
Lorain	23.6%	0	0	0	0	21.5%
Wright	47.0%	0	0	0	0	46.7%
Average	46.1%	..	..	..	..	36.1%

TABLE 33

OHIO
State Tax Appropriations for Public Higher Education*
1951-52—1966-67

Year	Amount Appropriated
1951-52	$21,481,335
1952-53	21,597,829
1953-54	24,094,436
1954-55	24,360,257
1955-56	23,944,208
1956-57	24,291,028
1957-58	31,677,972
1958-59	33,643,863
1959-60	37,942,463
1960-61	39,719,518
1961-62	45,240,293
1962-63	47,379,372
1963-64	52,611,408
1964-65	59,831,453
1965-66	75,018,950
1966-67	83,011,375

*Does not include appropriations for the Cooperative Extension Service, the Ohio State University Hospitals, and the Agricultural Research and Development Center.

portion represented by state subsidies ranged from 7 percent of available income at The University of Cincinnati to nearly 73 percent of total income at The Central State University.

The state appropriation of tax funds in support of higher education has risen steadily since 1951-52. Total appropriations to six state-sponsored institutions of higher education amounted to 21.5 million dollars in 1951-52. For the year 1966-67 the state appropriations for higher education to thirteen state-assisted institutions of higher education amounted to more than 83 million dollars. Over a 16 year period this is an increase of nearly four times. These data are shown in Table 33.

To be sure, much of this increase has been required for enrollment expansion. Moreover, whereas six institutions were receiving state financial assistance in 1951-52, the number had grown to thirteen in 1965-1966. Yet when one examines the appropriation support provided the six institutions which existed throughout the period, it is apparent that state tax support has grown substantially over this period of time, and that support per full-time equivalent student has generally expanded as well. The experience of these six institutions is shown in Tables 34 through 39.

Appropriations per student have fluctuated in large part because of variations in enrollment experience in relationship to enrollment forecasts, and because there has been no mechanism for reducing or increasing appropriations in accordance with actual enrollment. Assuming a fixed appropriation total, if an institution has an actual enrollment less than its forecast, its effective appropriation per student will rise. If an institution has an actual enrollment greater than its forecast, its effective appropriation per full-time equivalent student will fall. Similarly, inasmuch as full-time equivalent students are calculated from aggregate credit hours of student registration, any change from the anticipated average course load carried by students will change the effective appropriation support per student. When the average course load goes down in comparison with previous experience, the effective appropriation per full-time student equivalent will rise.

TABLE 34

Appropriations from Tax Sources
1951-1966
Bowling Green State University

**Showing Comparisons With
Full-Time Equivalent Student Enrollments**

	Annual		
Year	Tax Appropr.	FTE Students	Appropr. Per FTE
1951-52	$1,665,788	3,714	$449
1952-53	1,631,193	3,472	470
1953-54	1,905,481	3,433	550
1954-55	1,897,571	3,682	515
1955-56	1,996,269*	4,212	474
1956-57	2,003,469*	4,824	415
1957-58	2,596,338	5,271	493
1958-59	2,846,507	5,850	487
1959-60	3,263,693	6,450	506
1960-61	3,436,307	6,995	491
1961-62	4,057,834	7,834	518
1962-63	4,287,665	8,527	503
1963-64	4,690,486	9,334	503
1964-65	5,062,095	10,491	483
1965-66	5,990,170	10,958	547

* Tax appropriations for these years are not comparable with those of other years because they did not include the amount required to be paid to the State Teachers Retirement System. In all other years an amount for this purpose was included in the appropriation from tax sources.

TABLE 35

Appropriations from Tax Sources
1951-1966
Central State University

**Showing Comparisons With
Full-Time Equivalent Student Enrollments**

	Annual		
Year	Tax Appropr.	FTE Students	Appropr. Per FTE
1951-52	$ 843,803	790	$1,068
1952-53	759,017	790	961
1953-54	1,029,877	870	1,184
1954-55	1,007,877	888	1,135
1955-56	1,037,227*	947	1,095
1956-57	1,069,865*	966	1,108
1957-58	1,325,402	1,013	1,308
1958-59	1,368,093	1,147	1,193
1959-60	1,493,805	1,398	1,069
1960-61	1,546,905	1,743	887
1961-62	1,662,135	1,910	870
1962-63	1,752,649	2,127	824
1963-64	1,673,344	2,178	768
1964-65	2,006,929	2,896	693
1965-66	1,858,915	2,241	830

* See Table 34

TABLE 36

Appropriations from Tax Sources
1951-1966
Kent State University

Showing Comparisons With
Full-Time Equivalent Student Enrollments

	Annual		
Year	Tax Appropr.	FTE Students	Appropr. Per FTE
1951-52	$2,206,619	5,500	$401
1952-53	2,239,260	5,252	426
1953-54	2,480,470	5,552	447
1954-55	2,610,838	6,034	433
1955-56	2,733,110*	6,819	401
1956-57	2,762,860*	7,432	372
1957-58	3,623,207	7,583	478
1958-59	3,935,000	8,341	472
1959-60	4,508,100	9,186	491
1960-61	4,806,900	9,984	481
1961-62	5,793,187	10,937	530
1962-63	6,003,718	11,770	510
1963-64	6,653,981	13,294	501
1964-65	7,452,459	15,342	486
1965-66	8,220,165	14,809	555

* See Table 34

TABLE 37

Appropriations from Tax Sources
1951-1966
Miami University

Showing Comparisons With
Full-Time Equivalent Student Enrollments

	Annual		
Year	Tax Appropr.	FTE Students	Appropr. Per FTE
1951-52	$2,039,631	5,372	$380
1952-53	2,008,284	5,376	373
1953-54	2,362,250	5,541	426
1954-55	2,401,930	5,542	433
1955-56	2,497,148*	5,763	434
1956-57	2,528,332*	6,127	413
1957-58	3,266,021	6,494	503
1958-59	3,581,648	6,799	527
1959-60	3,845,583	7,525	511
1960-61	3,914,417	7,808	501
1961-62	4,576,500	8,490	539
1962-63	4,771,820	9,197	519
1963-64	4,816,215	9,609	501
1964-65	4,968,306	10,291	483
1965-66	6,255,000	11,500	544

* See Table 34

TABLE 38

Appropriations from Tax Sources
1951-1966
Ohio State University

Showing Comparisons With
Full-Time Equivalent Student Enrollments

	Annual		
Year	Tax Appropr.	FTE Students	Appropr. Per FTE
1951-52	$12,561,546	20,439	$615
1952-53	12,848,695	20,155	637
1953-54	13,886,155	21,398	649
1954-55	14,031,838	22,119	634
1955-56	13,164,911*	23,648	557
1956-57	13,347,005*	24,297	549
1957-58	17,290,500	24,178	715
1958-59	18,015,612	23,546	765
1959-60	20,281,622	24,661	822
1960-61	21,249,649	26,438	804
1961-62	23,831,731	28,827	827
1962-63	25,086,223	31,023	809
1963-64	26,607,529	33,553	793
1964-65	29,502,446	37,022	797
1965-66	34,624,355	38,946	889

* See Table 34

TABLE 39

Appropriations from Tax Sources
1951-1966
Ohio University

Showing Comparisons With
Full-Time Equivalent Student Enrollments

	Annual		
Year	Tax Appropr.	FTE Students	Appropr. Per FTE
1951-52	$2,163,948	4,486	$482
1952-53	2,111,380	4,425	477
1953-54	2,430,203	5,000	486
1954-55	2,410,203	5,889	409
1955-56	2,515,543*	6,947	362
1956-57	2,579,497*	7,618	339
1957-58	3,576,504	7,802	458
1958-59	3,897,003	8,155	478
1959-60	4,549,660	8,677	524
1960-61	4,765,340	9,065	526
1961-62	5,318,906	9,962	534
1962-63	5,477,297	10,799	507
1963-64	5,793,489	11,427	507
1964-65	6,654,375	13,125	507
1965-66	8,216,005	15,318	536

* See Table 34

In the biennium 1963-1965, the general appropriation law provided for the first time that the appropriation support per student might be reduced if enrollment proved to be less than was forecast. In the biennium 1965-1967, the general appropriation law provided that the appropriation support might be reduced or increased in accordance with actual enrollment experience. There is a limit, however, within which such increases can be made. Without an emergency appropriation, the total amount available for state support for higher education cannot be increased. Thus, in order for the appropriation support of any one institution to be increased, off-setting reductions must be made in the support to some other institution.

In the development of the Governor's Budget each biennium, appropriation support for higher education in Ohio has always been related in some way to enrollment. Since appropriation support is almost entirely for the instructional activity of the various institutions, this relationship would be expected.

In the years from 1951 to 1963, the Inter-University Council as the voluntary coordinating mechanism for the six state-sponsored institutions undertook to formulate appropriation needs. Within the total amount determined to be available for support of higher education in the light of the income and expenditure program for state government as a whole, the Council undertook a distribution among the individual institutions. This distribution tended to be related to the total distribution of enrollment among the six institutions, with some allowance for the smaller size of Central State and for the broader scope of instructional activity at Ohio State. Yet it was only in 1963-1965 that the relationship between state financial support and enrollments was made explicit in the general appropriation legislation, and it was only in 1965-1967 that various refinements in the relationship were introduced.

The 1965-1967 law, by explicitly recognizing differences in the expenditure requirements of various levels of instruction, introduced an entirely new factor into the appropriation support of higher education in Ohio. The appropriation law for 1965-1967 set forth "support rates" for the biennium as follows:

Undergraduate Level	*Support Per Student*
A. All state universities	$ 525
B. Central State College	715
C. Dayton State Campus	
(1965-1966)	215
(1966-1967)	315
Graduate Level	
A. All state universities (except The Ohio State University)	815
B. Central State College	815
C. The Ohio State University (graduate and professional)	2,140
D. Dayton State Campus	815
Other	
A. All community colleges	200
B. All municipal universities (first and second year only)	200
C. All State university branches	200

Current Operating Expenditures for Instruction

The Board of Regents is seeking to develop a satisfactory formula or procedure for calculating the instructional expenditure needs and the future appropriation support needs of the various state-assisted institutions of higher education. It is not possible to set forth a finished formula in detail at this time, but it is possible to outline the procedure which may well be employed in the development of future appropriation requests for submission to the Department of Finance and the finance committees of the General Assembly. Aside from continued support for special Research and Public Service functions earlier described for The Ohio State University, these procedures would concentrate upon identifying needs for state support of instructional activities.

Under the standard chart of accounts developed in Ohio, the program activity labelled "Instruction and General" is further divided into the following major categories of expenditure:

1. Departmental Instruction
2. Off-Campus Instruction
3. Instructional Services
4. Libraries
5. Student Services
6. General Expense
7. Plant Operation
8. Administration

The proportions of total expenditures devoted to these several purposes at each of 13 state-assisted institutions are indicated in Table 40. Expenditures for instruction at branches are shown as a separate item for seven institutions. A good deal of understanding concerning the needs of various institutions can be drawn from a thoughtful analysis of these expenditure patterns.

If we combine the proportions shown in Table 40 for departmental instruction and off-campus instruction, we find that between 55 and 73 percent of all Instruction and General expenditures are required for direct instructional activity. This category of expense includes faculty salaries, teaching assistants, laboratory assistants, stenographic and clerical assistance, instructional supplies and equipment, faculty travel, faculty office expenses, and instructional staff benefits.

Instructional Services in 1965-66 required from 1 percent to 3 percent of the Instruction and General budget. These Instructional Services included the operation of audiovisual services, all or a share of the costs of educational radio and television facilities, computer laboratories, and other specialized instructional adjuncts not identifiable with individual teaching departments.

The proportion of the budget devoted to support of Libraries ranged from 3 to 6.5 percent.

Student Services varied from 3.4 percent of the total Instruction and General budget to a high of 9.7 percent, except that The Cuyahoga Community College indicated as much as 13 percent of its Instructional and General outlay to be needed for this activity. Student Services included admissions, registration, supervision of students in residence halls, student counseling, student placement, the administration of student aid, supervision of social activities, student activities, and the handling of student discipline.

General Expense ranged from 2 percent to almost 13 percent of the Instruction and General budget. This general expense category included outlays for publication of catalogues and other necessary printed materials, for convocations and commencements, for performance of artists, for special lectures, and for institutional relations with the general public.

TABLE 40

Percentage Comparison of Instruction and General Expenditures Public Institutions of Higher Education—Fiscal Year 1965-1966

	BGSU	CSC	Cleve.S.	KSU	Miami	OSU	Ohio U.	Dayton	Akron	Cin.	Toledo	CCC	LCCC
Departmental Instruction	57.8%	54.8%	56.3%	56.2%	62.5%	67.9%	58.3%	73.1%	56.8%	67.0%	66.9%	53.1%	58.0%
Off-Campus Instruction	2.2	0.4	—	10.7	3.3	4.8	7.6	—	—	—	—	6.1	—
Instructional Services	2.6	2.2	1.3	2.1	3.0	1.7	2.6	0.8	3.7	0.2	0.9	1.9	—
Libraries	3.9	5.3	3.0	3.7	4.2	3.4	3.6	6.5	5.4	3.6	4.1	3.9	5.2
Student Services	9.7	7.5	9.1	8.3	9.1	3.4	6.4	4.9	6.1	5.6	4.7	13.3	8.7
General Expense	4.1	5.6	6.7	4.2	3.1	3.1	4.2	2.0	8.8	7.4	7.1	3.6	12.7
Plant Operation	14.7	17.8	14.1	10.4	11.0	13.0	13.4	6.6	13.7	12.1	12.1	12.5	9.0
General Administration	5.0	6.4	9.5	4.4	3.8	2.7	3.9	6.1	5.5	4.1	4.2	5.6	6.4
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Plant Operation demanded from 9 percent to nearly 18 percent of the Instruction and General budget of each institution.

Finally, General Administration required from 2.7 percent to a high of 9.5 percent of the outlay for Instruction and General purposes at the several institutions.

There is yet another way to analyze the Instruction and General expenditures of each instition. This is on a per-student basis. Such data for 1965-66 are presented in Table 41. It will be noted that total expenditures for Instruction and General purposes varied from 656 dollars per student at Cuyahoga Community College to a high of 1,433 dollars per student at Ohio State. All this variation really tells us is that there is a great deal of difference between the instructional programs of the two institutions. Indeed, one may go a step farther and say that in the light of the difference in programs, it is surprising that the difference in expenditures per student is not even greater.

There are probably some expenditures which can properly be compared on a per-student basis: expenditures for administration, for general expense, and perhaps for plant operation. Actually, this last item will tend to vary with the age of the buildings being maintained on a campus, with the standards of maintenance activity over a period of years, and with emergency needs which may arise.

Student Service expenditures tend to vary with the extent of actual student supervision and guidance which an institution may provide. In turn, the extent of this activity is dependent in good part, it appears, on whether an institution has a preponderantly residential student body living in university owned or approved housing or whether the students generally reside with parents or close relatives and attend the institution only during class hours.

TABLE 41

Budgeted Expenditures of State-Assisted Institutions Per Full-Time Equivalent Student 1965-1966

	Total	Departmental Instruction	Instructional Services	Libraries	Student Services	General Expense	Plant Operation	Administration	Off-Campus Instruc.
Bowling Green	$1,077	$638	$29	$43	$103	$46	$162	$56	$347
Central	1,121	617	25	60	85	62	201	71	—
Cleveland	1,024	573	12	40	85	83	134	95	—
Kent	1,102	691	26	49	103	51	128	54	500
Miami U.	924	595	29	40	87	30	106	36	510
Ohio U.	1,005	628	29	42	81	40	144	41	442
Ohio State	1,433	1,022	26	51	51	47	196	41	737
Akron	803	456	29	43	49	71	110	44	—
Cincinnati	1,106	754	3	41	63	66	136	45	—
Toledo	886	593	8	36	41	62	107	37	—
Cuyahoga	656	388	12	26	87	24	82	37	—
Lorain	817	623	—	55	90	127	98	68	—
Wright	723	529	6	47	35	15	48	44	—

Instructional Services will tend to vary on a per-student basis depending upon the extent of audiovisual, radio, and television activities and upon the operation of computer laboratories in conjunction with various teaching programs.

Library expenditures and departmental instruction expenditures per student will tend to vary with the level of instruction provided by the institution: lower division, upper division, graduate professional, master's study, and doctoral study and research. Usually, the higher the program level offered, the more specialized will be the library materials needed. In the instance of a new campus, if an initial stock of library volumes has not been provided as an equipment expenditure from capital funds, then the current outlay for books on a per-student basis is likely to be high.

Insofar as departmental instruction is concerned, the major variable is that of the student-faculty ratio. At the lower division level of instruction, classes are usually fairly large and the student-faculty ratio is relatively high. At the upper division level, students begin to specialize more in their course work, more courses have to be offered to meet different student interests, class size tends to be small, and the student-faculty ratio tends to be relatively low. In general, although not always in every program field, these same factors tending toward specialization, small class size, and a low student-faculty ratio operate at the levels of graduate professional, master's, and doctoral study.

Unfortunately, university accounting practices and expenditure analysis procedures have not provided uniform or standard data which permit a ready refinement of these variations in expenditure patterns by level of study. Provision of such uniform data is one of the major improvements needed in the analysis of departmental expenditures at various institutions of higher education.

Instructional Cost Control

The Board of Regents is developing a standardized information system in order to provide improved analytical data for the Board's use. One part of this information system is intended to assist in the formulation of an instructional cost control procedure. In turn, instructional cost control will be utilized in determining future state subsidy requirements for the institutions receiving state financial assistance.

The standardized information system is constructed around three basic concepts:

1. Instructional Program Concept
2. Instructional Program Level Concept
3. Institutional Analysis Concept

The *instructional program* concept divides all of the instructional programs of every state-assisted institution into ten primary programs: the humanities, the sciences, the social sciences, education, engineering and technology, natural resources, health professions, medicine and dentistry, other professional studies, and general education. All of the disciplines and professional fields of study in an institution are included under one of these ten program groupings.

The *instructional program level* concept involves the subdivision of each of these ten instructional program groupings into five distinct levels: lower division undergraduate, upper division undergraduate, master's degree, doctor's degree, and professional.

For each of these ten program groupings and five program levels, certain definite information will be obtained from each institution for analysis. Insofar as current instructional operations are concerned, data will be obtained and analyzed on full-time equivalent faculty, full-time equivalent students, and dollar expenditures. Thus, it will be possible to determine for each program grouping and program level the cost of a full-time equivalent faculty member, the cost of institutional support of this full-time equivalent faculty member, and the number of students he is teaching.

The concept of *institutional analysis* is a first necessary step in arriving at a satisfactory projection of future instructional expenditure requirements and future desirable state subsidy of instructional expenditures. The ingredients for such projections of instructional expenditures and instructional subsidy will be clear understandings of present performance in such matters as:

1. Staffing standards (student-faculty ratio by program group and level)
2. Average faculty salary (by program and by level)
3. Instructional support expenditures
    a. Departmental expenses (retirement and other benefits, teaching assistants, laboratory assistants, stenographic assistants, travel, supplies and equipment, administration)
    b. Instructional Services
    c. Library Services
    d. Student Services
    e. General Services
    f. Plant Operation
    g. General Administration

In the instance of all instructional support expenditures, these will be analyzed on the basis of expenditure per full-time student and of expenditure per full-time faculty member. Knowing with some precision the key facts about present performance, it will then be possible to establish desirable expenditure requirements for instruction by program groupings and program levels. Upon the basis of such standards, state subsidy support will be established.

The details of the current operating budget system and instructional cost control system will be described in future budget presentations of the Board, when recommendations for state subsidy of the current operating expenditure needs of the state-assisted universities are transmitted to the state Department of Finance and the General Assembly.

Fiscal Autonomy

Development of the concept that each state-assisted institution of higher education shall constitute a separate financial entity with authority and responsibility for the complete control of its financial resources has necessitated a number of changes in financial procedure. As has been mentioned earlier, student fees for instructional and other purposes are no longer deposited with the Treasurer of State. Further, state appropriations are considered a subsidy to each institution and are paid on a monthly basis to each institution in one lump sum. Administrative accounts of each individual financial transaction are no longer maintained in Columbus.

At the same time, it has been necessary to develop new auditing procedures, including standardized financial reporting practices, and these new procedures have been worked out by the Auditor of State. The Board of Regents has outlined for each institution certain common budget procedures which each institution should make certain it follows. The Board has also recommended a standard terminology in the designation of fees. It has proposed that three kinds of fees be levied and collected by state-sponsored universities. A fourth fee may be needed where local government support is provided in order to recognize a difference between students residing in the local taxing district and those residing outside that district. The three kinds of fees are:

1. Instruction and General Fee (for support of instruction and general expenditure)
2. Student Services Fee (student center or student union, student health program, artists and lecture program, athletic program, student activities, student facilities)
3. Tuition Fee (for support of instruction and general expenditure to be collected from out-of-state residents).

Capital Plant Improvements

As is suggested by the assignment of two distinct budget responsibilities to the Board of Regents by the law setting up the agency, current operating expenditures and state subsidies for operating purposes represent only one part of the financial planning for higher education. The other part of this planning involves the financing of capital plant improvements.

Substantial progress has been made in the past four years in augmenting the capital plant resources of state-assisted institutions of higher education in Ohio. In November, 1963, a 250-million-dollar bond issue was approved by vote of the people of Ohio, and of that amount 175 million dollars were ear-marked for capital improvements at institutions of higher education. Of these 175 million dollars, 115 million were appropriated by the General Assembly for improvements and expansion on the central campuses of the long-established six state universities and at the Ohio Agricultural Research and Development Center. The remaining 61 million dollars were appropriated to support new construction at the three municipally sponsored universities, at the new Cleveland State University, at the two new community colleges, at the new Dayton Campus, at Youngstown University, and at three new university branches (Lima, Mansfield, and Middletown). These various projects represented the first state plant investment at new higher education locations in Ohio since 1910.

In May, 1965, the voters of Ohio approved an additional bond issue of 290 million dollars of which 145 million dollars were earmarked for the benefit of higher education. All of these additional capital improvement funds were appropriated by House Bill No. 949 of the 106th General Assembly in September, 1965. Of this amount, some 55 million dollars were appropriated directly to the Ohio Board of Regents for later release by the State Controlling Board to specific projects for the benefit of technical institutes, community colleges, and university branches (including new units at Ohio State, Akron, Cincinnati, and Toledo). The remaining 90 million dollars went for new buildings on state university campuses, the largest total of 37.5 million dollars going to the new Cleveland State University, and another 7.5 million dollars going to the new Toledo State College of Medicine.

In Table 42 the total state investment in capital plant improvements since the end of World War II is summarized. It will be noticed that all capital improvement appropriations up to 1963 amounted to just under 129 million dollars. The two bond issues of 1963 and 1965 have provided a total of 320 million dollars for new capital plant facilities in higher education. When all of these projects are completed in 1968 or 1969, the State of Ohio will have made an unequalled advance in the quality of its higher education plant in a five-year period of time.

Unprecedented as have been these great efforts to provide new facilities for higher education, there are still unfulfilled needs which should be met before 1970, some further expansion of plant which should be accomplished for the period 1970 to 1975, and another expansion to be anticipated for the period 1975 to 1980.

There are three kinds of plant needs which

TABLE 42

Post-World War II
State Investment in Higher Education
Physical Plant

Investment in Main Campuses of Institutions Existing in 1963

Institution	1946-1963	1963-1965 1st Bond Issue	2nd Bond Issue	Total
Ohio State University	$70,166,000	$ 59,070,000	$14,000,000(1)	$ 73,070,000
Bowling Green State University	10,882,000	10,000,000	4,500,000	14,500.000
Kent State University	13,479,000	14,500,000	4,500,000	19,000,000
Miami University	12,579,000	10,000,000	4,500,000	14,500,000
Ohio University	13,575,000	13,500,000	4,500,000	18,000,000
Central State University	3,176,000	3,500,000	2,000,000	5,500,000
Agricultural R. & D. Center	5,127,000	4,585,000	1,500,000	6,085,000
Sub-Total	$128,984,000	$115,155,000	$35,500,000	$150,655,000

Investment in an Expanded System of Higher Education

Institution	1946-1963	1963-1965 1st Bond Issue	2nd Bond Issue	Total
Cleveland State University	—	$ 7,250,000	$37,500,000	$ 44,750,000
Wright State Campus	—	6,000,000	3,000,000	9,000,000
University of Akron	—	6,000,000	6,000,000	12,000,000
University of Toledo	—	6,000,000	6,000,000	12,000,000
Branches (16 locations)	—	17,000,000	16,025,000	33,025,000
University of Cincinnati	—	6,000,000	18,000,000	24,000,000
Community Colleges (4 locations)	—	7,750,000	15,250,000	23,000,000
Youngstown University	—	5,000,000	— (2)	5,000,000
Technical Institutes (3 locations)	—	—	6,300,000	6,300,000
Toledo St. College Medicine	—	—	7,500,000	7,500,000
Board of Regents	—	370,000	—	370,000
Sub-Total		$ 61,370,000	$115,575,000	$176,945,000
Grand Total	$128,984,000	$176,525,000	$151,075,000	$327,600,000
Less Recoveries HEFA		1,525,000	6,075,000	7,600,000(3)
		$175,000,000	$145,000,000	$320,000,000

(1) Includes $9,000,000 for the new General College of Ohio State University.

(2) Funds for Mahoning County developments are included also within the total for community colleges.

(3) Represents anticipated allocation of funds, under the federal Higher Education Facilities Act of 1963.

will have to be met between 1967 and 1980. These are:

1. Replacement needs
2. Research needs
3. Expansion needs.

Replacement Needs

The central campuses of Akron, Bowling Green, Central State, Kent, Miami, Ohio, Ohio State, and Toledo have some instructional facilities which are obsolete for current instructional programs and which are badly in need of replacement. The Board of Regents is now undertaking a careful inventory of such facilities and is preparing space requirements data and cost estimates for replacement.

In 1962 the Committee to Study Government Finance and Operations of the Ohio Legislative Service Commission sponsored a study of the physical plant needs of the then six state universities. Dr. John X. Jamrich, professor of higher education at Michigan State University, and his associate, Dr. Harold L. Dahnke, were retained to undertake this study. The results of this inquiry were published in 1963.[2]

Jamrich and Dahnke reported a total of 2,710,000 square feet of space at the six universities which was obsolete and in need of replacement or major reconstruction. These needs were distributed by institution as follows:

Bowling Green	225,000
Central State	103,000
Kent	48,000
Miami	353,000
Ohio	3,600
Ohio State	1,978,000

The striking variations between institutions suggest definition problems which must be overcome in future inventories by the Board of Regents. The overall magnitude of need for renovation or replacement of existing facilities is nevertheless impressive.

Some of this needed replacement is being accomplished by capital improvement projects under the 1963 and 1965 bond issues. As a result, the total of 2.7 million square feet has probably been reduced to under 2.5 million square feet. When Akron and Toledo become state universities as of July 1, 1967, their replacement needs will also have to be added to this inventory of obsolete space. From current information it appears that Toledo will need to replace some temporary structures used for instructional purposes and Akron will have one or two old buildings requiring replacement.

If we may assume that total replacement requirements are of the magnitude of 2.5 million square feet of space on state university central campuses, we may estimate that 50 million dollars will still be needed in order to provide adequate facilities for the current instruction programs and current enrollment of state institutions of higher education in Ohio. This amount may be reduced by careful review of replacement needs as stated by the various institutions.

The Board of Regents believes that first priority in any future capital improvement program for higher education must be given to urgent replacement needs on the central campuses of state universities. These campuses must be provided with the facilities necessary to their instructional activity, especially because of their future role n offering the upper division and graduate programs needed by the state.

Research Needs

A second capital improvement requirement for the central campuses of state universities is to expand the research facilities of these institutions. As new capital improvement projects have been undertaken in the last few years, laboratory, library, and other facilities for graduate study and faculty research have been added to the existing plant resources of the state universities and The University of Cincinnati. These additions have been incorporated as an integral part of the new instructional facilities provided at state institutions.

It is necessary that as future facilities are constructed for expansion of instructional activity, especially at the level of graduate study, further provision should be made for inclusion of research activities. There is a limit, however, to such expansion as an integral part of new instructional facilities. The research facilities appropriate to and indispensable for graduate study are not necessarily those most appropriate for faculty research under research grants. Moreover, some flexibility in the availability and assignment of research space seems desirable.

There is a need for additional research space on various campuses which will serve certain special purposes set forth in this Master Plan. One such purpose is to strengthen graduate study and research which may be meeting the needs of particular industries in Ohio for educated talent or for basic knowledge necessary to the future expansion and welfare of these industries. Another such purpose is to encourage expansion of special research interests and abilities at various universities which will at once attract specially talented faculty persons and enhance the academic reputations of our institutions. A third such purpose is to improve the opportunity for faculty members generally to engage in research which will contribute to their own professional development.

The federal government in recent years has provided extensive assistance to institutions of higher education in developing their physical plant resources for research. In all such grants, however, some participation has been expected from state or local sources in the development of these facilities. The State of Ohio must be prepared to play its part in the growth of research plant.

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[2] John X. Jamrich and Harold L. Dahnke, *Ten-year Building Needs for Higher Education in Ohio 1962-1972* (East Lansing: Michigan State University), 1963.

The Board of Regents has requested the state-assisted universities to make a careful analysis of additional research space which may be needed to realize the purposes outlined above. As future sources of plant financing become available in Ohio, some of these needs should be fulfilled.

Expansion Needs

The 100 or so capital improvement projects recently undertaken at various state-assisted institutions of higher education have been concerned with the three facility needs just enumerated: replacement of obsolete facilities, new research space, and enrollment expansion.

As of April 1, 1966, the following projects had been financed with state funds for the primary purpose of expanding enrollment opportunity in Ohio. Only commitments from state bond issues are included here; local matching contributions and federal facility grants have not been added to the capital amounts listed here:

	Amount	Head Count Enrollment Capacity
1. Cleveland State University	$44,750,000	24,000
2. Wright State Campus	9,000,000	8,000
3. Cuyahoga Community College	9,000,000	20,000
4. Ohio State-General College	9,000,000	10,000
5. Lorain County Community College	6,000,000	6,000
6. Toledo	6,000,000	4,000
7. Akron	6,000,000	4,000
8. Cincinnati-Blue Ash	3,000,000	3,000
9. Middletown	2,000,000	3,000
10. Hamilton	1,800,000	2,000
11. Lima	3,300,000	3,000
12. Mansfield	2,500,000	3,000
13. Marion	1,800,000	2,000
14. Newark	1,800,000	2,000
15. Sandusky	1,800,000	2,000
16. Ashtabula	1,800,000	2,000
17. Warren	1,800,000	2,000
18. Canton	2,400,000	2,000
19. New Philadephia	1,800,000	2,000
20. Belmont County	2,000,000	2,000
21. Zanesville	2,000,000	2,000
22. Lancaster	1,800,000	2,000
23. Chillicothe	2,000,000	2,000
24. Portsmouth	2,000,000	2,000
25. Montgomery County	2,000,000	2,000
26. Mahoning County	3,000,000	2,500
27. Stark County	2,500,000	1,200
28. Clark County	2,000,000	1,200
29. Toledo College of Medicine	7,500,000*	400
Totals	$142,350,000	121,300

*This is only a beginning appropriation for this institution and more will be required.

The figure of 121,300 provided in this calculation does not represent a net addition to enrollment in these institutions. From these totals must be subtracted the number of students now being accommodated in these institutions or places, usually in temporary facilities. As of October, 1965, approximately 30,000 students were enrolled at these locations. Thus, the actual net increase available when these new facilities are completed will be around 90,000 students.

Neither do the above figures include enrollment capacity expected to be developed on the central campuses of the six long-established state universities. Capital investments now being made at these campuses not only will support increased concentration upon the upper levels of teaching, but will result also in expansion of enrollment capacity approximating 30,000 student spaces. This new capacity when added to the 90,000 spaces described above gives a total of new student spaces approximating 120,000.

In the autumn of 1965, state-assisted institutions of higher education in Ohio had a total head-count enrollment of 160,000 students. Our forecast for 1970 is that this enrollment will reach about 280,000 students. Thus, it would appear that construction now underway should generally be expected to meet most of the enrollment demand to be anticipated by 1970.

The primary concern at the present time should be with making provision for enrollment growth between 1970 and 1975. Our estimates in this Master Plan forecast a head-count enrollment of 390,000 students in public institutions by 1975. This means that plans must be made for another program of plant expansion to accommodate 110,000 students.

It is important to note that a substantial leadtime is needed in planning and executing a capital improvement program. A program authorizing enrollment expansion for another 110,000 students must be approved and financed before 1969 if this future enrollment is going to be provided for. Otherwise, large numbers of students wanting to go to college will not have a place to go during the 1970-1975 period and thereafter.

Controlling Future Plant Expansion

The future capital plant improvements of state universities need to be carefully planned if they are to meet essential needs, if they are to be fully utilized, and if they are to be provided economically. Such planning under current law must be directed by the Board of Regents.

In the period since its organization in 1963, the Board has given a great deal of attention to various aspects of capital plant planning, such as space utilization, standardization of space requirements, and standardization of planning. These efforts should be continued if plant requirements are to be met properly and economically.

A major concern in future capital improvements will be rising costs of construction and equipment. In the past three years construction costs have been relatively stable. As of early 1966 this stability appears likely to come to an end. Rising costs must be expected because of increased demand for construction, with attendant increases in materials costs and labor costs. This circumstance makes it all the more urgent that facility needs be carefully analyzed, that space requirements be kept to a reasonable minimum, and that economies be realized wherever possible.

The planning of individual campuses in terms of land-use and building relationships has been handled in the past by the staffs of individual institutions, with the approval of their boards of trustees. No change in this authority and responsibility seems desirable. Even under these circumstances, however, it is reasonable for the staff and members of the Board of Regents to expect that land needs will be restricted to essentials and that building sizes and locations will be appropriate to instructional requirements and land availability.

One troublesome problem in this regard can be that of architectural style and esthetic standards. In the past these also have been matters left to the judgment of individual institutions. In most circumstances the authority for these decisions should remain with the boards of trustees. Difficulties arise, however, when costly styles of architecture and costly materials are incorporated into the design of instructional facilities. Difficulties also arise when opportunities for a close integration of function and style in some innovative relationship are rejected in favor of past experience, regardless of the cost factors involved. Boards of trustees as well as the Board of Regents have an obligation to be concerned about the cost of future capital plant improvements.

The Board of Regents has collected information from state-assisted universities about the hours of classroom and laboratory use per week. The experience in space utilization reported to the Board is shown in Table 43. While there is some variation among institutions, the general record appears satisfactory.

TABLE 43

Average Weekly Hours of Use
General Classrooms and
Instructional Laboratories
1965

Institution	Hours of Classroom Use	Hours of Laboratory Use
Akron	39.1	16.0
Bowling Green	37.0	22.3
Central State	29.7	22.6
Cincinnati	37.5	30.6
Kent	32.7	24.2
Miami	33.0	20.8
Ohio	29.7	15.9
Ohio State	32.6	19.0
Toledo	37.8	15.5

A minimum desirable standard rate of space utilization on a campus would be to have all general classrooms used on the average of 30 hours a week and to have all instructional laboratories used on the average of 20 hours a week. The state-assisted institutions generally meet these minimum standards of space utilization.

Space utilization, of course, tends to increase beyond this when late afternoon and evening classes are provided by a college, a branch, or a university. Space utilization is usually higher also in urban areas than on campuses where students live in residential facilities.

In analyzing applications for higher education facility grants made by the federal government, the Office of Education uses a capacity/enrollment ratio as a standard of space need. The facility capacity of a campus is determined by adding the square feet of general classroom space, the square feet of library space, and the square feet of laboratory space. Enrollment is determined by the total number of hours of class instruction and of laboratory instruction provided by the institution. For reasons of convenience in calculation, the total number of classroom hours and laboratory hours of instruction is expressed in one hundred (i.e., with two zero's dropped). Capacity divided by enrollment provides the capacity/enrollment ratio. The standard for minimum satisfactory utilization of space is a capacity/enrollment ratio under 500.

Under this system of calculation, the record of state-assisted institutions again appears satisfactory. This record as of 1965 was as follows:

Akron	255
Bowling Green	245
Central State	139
Cincinnati	169
Kent	218
Miami	206
Ohio	112
Ohio State	294
Toledo	258

The Board of Regents intends to continue its analyses of space utilization in determining the relative needs of various institutions for additional facilities.

A second approach to the economical construction of space is to establish definite standards of space needs for instructional purposes. A good deal of work has been done along these lines in several different states. Among the state assisted universities in Ohio, The Ohio State University has done the best job of planning its instructional facilities by using space standards.

The Board of Regents proposes to review all instructional facility requirements against the table of standardized sizes shown in Table 44. Where requirements exceed these standards, appropriate reductions or special justification will be required from each institution.

TABLE 44

Desirable Standards of Space For Instructional Facilities

	Square Feet Per Student Station
Lecture Halls	10
Classrooms	
Large (60-100 students)	13
Medium (30-60) students)	15
Small (15-30 students)	17.5
Seminar	20
Teaching Laboratories	
Lower Divsion	40
Upper Division	60
Graduate	75
Drafting	35
Fine Arts	45
Offices	
Faculty	110
Stenographic	100
Department Head	150
Counseling Office	100
Library	
Reading Space	25
Carrels	35
Stacks (per 12 volumes)	1

Branch Campus Planning

With regard to the sixteen branch campus projects and the technical institutes now under development, the space planning program of the Board of Regents has gone farther. The Board has had two primary objectives in mind. First, it has sought to ensure economical construction. Secondly, it has endeavored to avoid any sense of competition or any sense of preferential treatment among branches insofar as their facilities are concerned.

The first action taken by the Board of Regents in 1964 was to establish certain standard space needs for a university branch facility designed to accommodate 1,000 full-time daytime students and 1,000 to 1,500 part-time evening students. The Board outlined total requirements of 100,000 square feet for such a facility, subject to adjustment for special circumstances. For a technical institute of 600 students, the Board outlined total requirements of 80,500 square feet.

The second action taken by the Board was to develop certain standardized component parts to be incorporated in the architectural planning and specifications for university branches. The Board investigated a program which had been developed in California for standardized component elements for high school buildings and then introduced its own modified program of the same kind. With the assistance of its architectural consultants, the Board designed a standard 5-foot by 5-foot construction planning module, and then prepared specifications for wall materials, ceiling materials, floor materials, and lighting and ventilating systems to fit this standard module.

These efforts resulted in reductions in the cost of branch facilities as shown in Table 45. The several branch facilities have been listed in the order in which contracts were awarded beginning in the autumn of 1964 and ending in February, 1966. The first three branches did not incorporate any of the recommended components. The last six branch facilities did.

The increased cost per square foot at Canton seemed to reflect a tight construction market in the area, as well as some increase in the cost of materials.

The third action taken by the Board of Regents with regard to ensuring sound and economical branch planning involved the preparation of a standard set of working drawings and specifications for a university branch facility.

TABLE 45

Construction Costs
University Branches
1964-1966

Branch	Bldg. Cost	Sq. Ft.	Cost/Sq. Ft.
Lima	$1,490,705	82,600	$18.05
Mansfield	1,513,439	87,500	17.30
Middletown	2,082,474	106,658	19.50
Chillicothe	1,627,484	92,232	17.64
Zanesville	1,428,883	101,255	14.12
Portsmouth	1,446,338	106,073	13.63
Belmont County	1,354,404	91,824	14.74
Ashtabula	1,445,671	104,584	13.82
Canton	1,520,884	97,278	15.63

Note: The above figures do not include architect fees, equipment costs or site improvement costs.

These drawings and specifications were planned for completion in the spring of 1966 and are expected to be used as a standard for evaluation of other branch plans.

In every way possible the Board will work continuously to keep construction commitments within reasonable limits as the State of Ohio moves forward in meeting its higher education commitments and aspirations.

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